

67 B8

LEVEL BOOK.

410.

B

C

BRADSHAW MOUNTAIN R.R.

—— Big Bug Branch ——

Construction Notes

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Station Grade Section 5
 L C R

225+35 536333

$\frac{+5.5}{9.4}$ +2.5 $\frac{0.0}{8.0}$

+50

$\frac{+8.0}{10.0}$ +5.6 $\frac{+3.1}{8.8}$

226

-223

$\frac{+14.7}{11.7}$ +13.0 $\frac{+12.0}{11.0}$

+50

$\frac{+23.9}{14.0}$ +22.6 $\frac{+22.5}{13.6}$

+70

$\frac{+26.6}{14.7}$ +25.8 $\frac{+24.6}{14.2}$

70.3 536031

227

$\frac{+25.0}{14.3}$ +24.3 $\frac{+23.2}{13.8}$

+60

-367

$\frac{+16.2}{12.1}$ +16.8 $\frac{+16.7}{12.2}$

+60.3

535701

228

18035

$\frac{+10.1}{10.5}$ +10.3 $\frac{+11.4}{10.9}$

+67

-400

$\frac{+0.6}{8.2}$ +0.7 $\frac{0.0}{8.0}$

+75

$\frac{0.0}{8.0}$ -0.3 $\frac{-1.1}{8.7}$

1

Areas		Cub. Yds	
Exc	Emb	Exc	Emb

43.75 00

39.1 Start to 229+35

97.04

Total Exc 4553.9 @ 4.

325.4 ^{class} Slip $\frac{1}{2}$ L.R. = 312.1

254.35

Balance Solid R = 4241.8

696.1 Haul 22810.

497.48

398.2

577.61

617.7

534.21

966.6

335.75

394.0

196.21

253.5

8.07 00

0.8 0.6

00 6.36

4.6 4.2

3714.4 4.8

Section 5

L C R

Station Grade

229 535142

$$\begin{array}{r} +2.6 \\ 8.7 \end{array} \quad +0.8 \quad \begin{array}{r} 0.0 \\ 2.5 \end{array} \quad \begin{array}{r} -1.2 \\ 8.8 \end{array}$$

+30

$$\begin{array}{r} +1.0 \\ 8.3 \end{array} \quad +0.5 \quad \begin{array}{r} 0.0 \\ 8.0 \end{array}$$

+35

$$\begin{array}{r} 0.0 \\ 8.0 \end{array} \quad 0.0 \quad \begin{array}{r} 0.0 \\ 8.0 \end{array}$$

+50

$$\begin{array}{r} -1.6 \\ 9.4 \end{array} \quad -2.6 \quad \begin{array}{r} -1.8 \\ 9.7 \end{array}$$

+58 175

$$\begin{array}{r} 0.0 \\ 8.0 \end{array} \quad -1.9 \quad \begin{array}{r} -2.9 \\ 11.4 \end{array}$$

229+80

$$\begin{array}{r} +2.6 \\ 8.7 \end{array} \quad +1.0 \quad \begin{array}{r} 0.0 \\ 4.0 \end{array} \quad \begin{array}{r} -2.3 \\ 10.5 \end{array}$$

230+05 178+30

$$\begin{array}{r} 0.0 \\ 8.0 \end{array} \quad -0.5 \quad \begin{array}{r} -1.8 \\ 9.7 \end{array}$$

+35

$$\begin{array}{r} -4.7 \\ 14.1 \end{array} \quad -6.6 \quad \begin{array}{r} -11.5 \\ 24.3 \end{array}$$

+70

$$\begin{array}{r} 0.0 \\ 8.0 \end{array} \quad -1.7 \quad \begin{array}{r} -3.9 \\ 12.9 \end{array}$$

230+90

$$\begin{array}{r} +3.5 \\ 8.9 \end{array} \quad +1.2 \quad \begin{array}{r} 0.0 \\ 4.0 \end{array} \quad \begin{array}{r} -1.7 \\ 9.6 \end{array}$$

231+09 5343.06

Areas

Cub. Yds

Exc Emb Exc Emb

14.88

2.70

3714.4

11.8

8.5

1.0

5.8

8.07

00

0.5

3723.4

00

00

20635.9

3929.7

51ps. P. 64.85

624.2

10.2

4553.9

36.73

9.7

00

28.58

Sta 229+58

4.5

13.1

to 230+05 Exc

20.0 Cy. Solid Rock

16.75

3.46

5.2

6.6

9.7

00

10.72

10.35.9

20.0

107.8

183.42

Sta 230+70 to 231+55

139.2 Exc + 1.6 Cy. S. R.

00

31.42

5.4

12.6

21.74

2.55

17.4

42.0

SC

22.8

341.2

41.6

Section 5

Station Grade

L C R

231 +55 ^{14.8}
-3.67

$\frac{0.0}{8.0}$ -1.4 $\frac{-4.8}{14.2}$

+99 5339.76

232

$\frac{-5.2}{14.8}$ -6.1 $\frac{-9.4}{21.1}$

+50

$\frac{11.2}{23.8}$ -14.6 $\frac{-24.4}{43.6}$

233

-3.36

$\frac{-25.8}{47.5}$ -27.8 $\frac{-29.7}{20.0}$ $\frac{-49.0}{80.5}$

+25

$\frac{-27.9}{41.9}$ -34.7 $\frac{-37.9}{45.0}$ $\frac{-40.7}{68.1}$

+55

$\frac{-18.7}{35.1}$ -2.16 $\frac{-29.1}{50.6}$

+68.8 5334.05

234

$\frac{7.4}{18.1}$ -8.7 $\frac{-15.0}{29.5}$

+15

-3.67

$\frac{-2.3}{10.5}$ -4.9 $\frac{12.2}{25.3}$

16' R B 1/4' 1/5 slope

+45

$\frac{0.0}{8.0}$ -1.6 $\frac{-6.6}{16.9}$

+58.8 5330.75

+70

-4.00

$\frac{+5.0}{9.2}$ +2.5 $\frac{0.0}{8.0}$

Areas Cubyds
Exc Emb Exc Emb

341.2

00 3234

160.8

160.60

Sta 229+35 to 234+70

719.6 Emb 8553.8

616.62

1703. made from
Cut Sta 2372312.1 balance from
Cuts at Ends.

1880.50

1853.3

2122.56

1786.3

1092.86

1148.6

✓

285.46

117.8

138.46

100.8

00 43.02

12.8 18.3

41.50

00

8553.8

20.4

33.2

Section 5

Station Grade

L C R

234+80 532990

+6.6
9.1 +4.1 +1.3
8.3

Boulder 6.0x6.0x3.0 = 4.0 cy.

235+20

+5.2
9.3 +3.6 +1.1
8.3

+35

+3.7
8.9 +2.3 0.0
8.0

235+56 532686

+65

0.0
8.0 -1.5 -4.9
14.4

235+90

-2.2
10.3 -6.4 -17.0
32.5

236+10

-2.8
11.2 -6.0 -6.8
17.2

+25

0.0
8.0 -0.6 -1.2
8.8

+35

+2.4
8.6 +1.2 0.0
8.0

+50

+4.6
9.2 +3.0 +1.2
8.3

237 532157

+14.7
11.7 +13.5 +12.1
11.0

Areas		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.
68.50		83.7	Sta 234+45 to 235+65
		92.9	Exp. 222.8 Cub. Yds. S.R.
56.88		4.0	
		25.3	
34.23	00		
		12.7	12.6
		168.1	
00	33.95	54.7	Sta 235+35 to 236+25
		222.8	Emb 279.1 Cy.
	204.16	110.2	Made from Cut
		119.6	rest
	118.80		
		35.6	
00	9.24		
		2.4	1.1
19.56	00	279.1	
		19.2	
49.45			
		286.9	
260.43			
		351.1	
		659.6	

Section 5

Station Grade

L C R

237+30 5320.47

+19.5
12.9 +18.5 +15.8
12.0

+65

+21.3
13.3 +19.0 +17.6
12.4

238

-3.68

+18.4
12.7 +17.0 +15.7
12.0

Boulders $\left\{ \begin{array}{l} 3.0 \times 3.0 \times 11.0 \\ 3.0 \times 4.0 \times 7.0 \\ 3.0 \times 3.0 \times 3.0 \\ 4.0 \text{ cy.} \end{array} \right\} = 11.8 \text{ cy.}$

+50

+12.7
11.2 +12.0 +11.4
10.9

238+73.9 5315.16

+87

+3.2
8.8 +2.3 0.0
8.0

238+98

0.0 0.0 +0.4 0.0 -5.5 -6.0
8.0 3.0 3.5 5.0 16.0

239+04

-4.00

-0.4 -0.5 -8.8
7.6 3.0 -6.4 20.2

16' R B 1/4' 1/5' slope

+06

0.0 -0.5 -8.8
8.0 3.0 -5.6 20.2

+30

+6.4
9.6 +3.0 0.0
8.0

+65

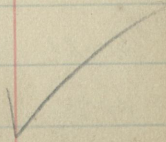
5311.52

+11.8
11.0 +9.1 +7.2
9.8

Areas	Cub. Yds
Exc. Emb	Exc. Emb

371.52		659.6	Sta 236 + 25 to 239 + 0 L
		499.9	Total Exc 2938.2 Cy.
399.75			Class Slip, Sup P. 69 Br ✓
			1/2 Lo. R. 203.3 Cy.
		484.1	Balance Cut SR = 2734.9 "
347.15		11.8	Same, Sup P. 69 Br, 17950
		533.5	
229.00		178.9	
32.12	00	6.7	5.5
0.70	40.38	0.1	16.5
		2374.6	
00	107.74	1569.59.	
		2531.5	
	Slips	406.7	7.6
		2938.2	
00	97.76	15.4	2.89
		58.5	
52.00	00	144.3	
170.64		241.8	
		401.5	

made from Cut West



Section 5

Station Grade

L

C

R

240 5310.12

$\frac{+12.4}{11.1}$

+10.6

$\frac{+9.7}{10.4}$

+50

$\frac{+5.3}{9.3}$

+5.4

$\frac{+4.4}{9.1}$

+73

$\frac{0.0}{8.0}$

00

$\frac{0.0}{8.0}$

240+90

$\frac{-2.1}{10.2}$

-4.8

$\frac{-7.6}{18.4}$

241+03

$\frac{0.0}{8.0}$

-2.0

$\frac{-6.0}{16.0}$

+20

$\frac{+3.6}{8.9}$

+1.1

$\frac{0.0}{5.0} \frac{-0.8}{8.2}$

+48

$\frac{0.0}{8.0}$

-1.9

$\frac{-5.0}{14.5}$

+65

$\frac{-2.7}{11.1}$

-5.3

$\frac{-10.6}{22.0}$

+80

$\frac{-1.1}{8.7}$

-4.0

$\frac{-13.8}{27.7}$

241+81

5302.88

242

$\frac{-0.3}{7.5}$

-3.2

$\frac{-14.1}{28.2}$

16' RR 1/4:1 Slope

Areas Cub. yds
Exc. Emb Exc. Emb

202.35

Sta 239+06 to 240+73

Exc 852.3 Cu. y.

269.3

Class Slip Sup 70 Br ~

88.48

1/2 L.R. = 26.1 Cu. y.

Balance Cut

Solid Rock = 826.2

37.7

708.5

00

00

91.7 59.

Haul = 3595

809.2

Slips

52.1

32.3

852.3

102.59

35.5

00

45.00

Sta 241+03 to 248

Exc 17.6 Cu. y. S.R.

4.6

14.4

22.04

80

7.6

20.6

00

38.87

12.2

5.4 59.

17.6

53.8

132.17

71.4

124.95

86.1

107.52

26.8

340.9

✓

Section 5

Station	Grade	L	C	R
---------	-------	---	---	---

242+07	5301.88	$\frac{00}{8.0}$	-2.8	$\frac{-14.0}{28.0}$
--------	---------	------------------	------	----------------------

+40		$\frac{+0.8}{8.2}$	$\frac{00}{5.0}$ -2.0	$\frac{-9.8}{21.7}$
-----	--	--------------------	-----------------------	---------------------

+50		$\frac{+1.8}{8.5}$	$\frac{00}{3.0}$ -1.2	$\frac{-6.8}{17.4}$
-----	--	--------------------	-----------------------	---------------------

+60		$\frac{+3.5}{8.9}$	+0.9	$\frac{00}{8.0}$
-----	--	--------------------	------	------------------

242+95	-3.84	$\frac{+13.9}{11.5}$	+10.2	$\frac{+8.7}{10.1}$
Deduct for Hole				
6.0 x 9.0 x 10.0 = 20 CY.				

243+25		$\frac{+16.7}{12.2}$	+12.8	$\frac{+9.5}{10.4}$
--------	--	----------------------	-------	---------------------

+50		$\frac{+16.2}{12.1}$	+11.5	$\frac{+8.1}{10.0}$
-----	--	----------------------	-------	---------------------

244		$\frac{+12.1}{11.0}$	+8.0	$\frac{+4.9}{9.2}$
-----	--	----------------------	------	--------------------

+25		$\frac{+9.0}{10.3}$	+5.4	$\frac{+2.3}{8.6}$
-----	--	---------------------	------	--------------------

+30	529334	$\frac{+6.7}{9.7}$	+4.1	$\frac{00}{8.0}$
-----	--------	--------------------	------	------------------

Areas		Cu. Yds	
Exc	Emb.	Exc.	Emb.
00	99.40		340.9
			Sta 2420.73 to 2421.60
		0.5	98.0
			Emb 461.3 made from cut mat.
1.20	61.00		
		1.1	18.0
4.50	36.04		
		4.8	4.4
21.60	00		461.3
		142.7	
198.56			Sta 2421.07 to 2441.43
		248.9	Total Exc 1284.4 Cu. Yds
249.44			Class Slips see P. 15.
		219.3	1/2 Lo. Rock = 45.9 Cu. Yds
			Balance Cut
224.27			Solid Rock = 1238.5 "
		345.4	Haul 3220.
148.80			
		113.4	
96.23			
		14.8	
63.09	00		
	deduct	1101.0	
		20.0	
	SS.	1081.0	
		111.7	
	Slips	1192.7	
			1284.4 / 4.7



Section 5

Station	Grade	L	C	R
2 244+43	529284	0.0 8.0	-1.8	-3.3 12.0

+75	-3.84	-6.1 16.2	-10.5	-20.6 37.9
-----	-------	--------------	-------	---------------

244+81 529136 16' RB 1/4:1 Slope

245+05		0.0 8.0	-2.8	-14.6 28.9
--------	--	------------	------	---------------

+40		+9.5 10.4	+4.4	0.0 8.0
-----	--	--------------	------	------------

2 245+55		+11.0 10.7	+5.3	+0.6 8.2
----------	--	---------------	------	-------------

2 246+10	-3.55	+11.6 10.9	+6.6	+2.5 8.6
----------	-------	---------------	------	-------------

+28		+9.2 10.3	+4.0	0.0 8.0
-----	--	--------------	------	------------

+55		0.0 8.0	-2.8	9.6 18.0
-----	--	------------	------	-------------

247		-8.8 20.2	-13.5	-28.3 49.5
-----	--	--------------	-------	---------------

+50	160+85 528183	-17.9 33.9	-18.9 30.0	-23.4 50.2
-----	------------------	---------------	---------------	---------------

Areas Cub. Yds
Exc. Emb Exc. Emb

00 29.55

4.7 Sta 244+30 to 245+40

Emb 557.1 Cu. Y.

241.2 Made from
Cut mat

377.47

266.8

00 102.76

4.6 Slip
33.9 44.4

78.48 00

557.1

48.6 Sta 245+05 to 246+55

37.3 Slip. Total Exc = 504.9

96.49

Class Slip $\frac{1}{2}$ Lo.R. = 21.0 Cu. Y.

22 1.3 Balance Cut S.R. = 483.9

120.75

Haul 23.49 East from

" 200 from 44+55 to 46+55 = 460

64.7

73.40 00

24.5 34.5

00 103.43

434.9
70.0 Subs.

504.9

586.5

600.32

1624.0

1153.64

1841.9

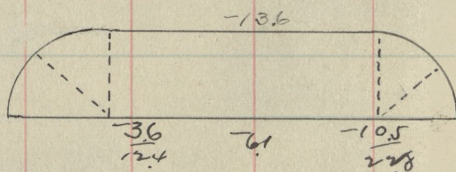
4086.9

Section 5

Station	Grade	L	C	R
247+90 H.B.	-3.55	$\begin{array}{r} -2.2 \\ 5.8 \\ \hline 7.0 \end{array}$	-24.7	$\begin{array}{r} -26.0 \\ 7.0 \\ \hline 52.0 \end{array}$
248	5280054	$\begin{array}{r} 2.1 \\ 3.2 \\ 3.0 \\ \hline 8.3 \end{array}$		$\begin{array}{r} 2.1 \\ 3.2 \\ 3.0 \\ \hline 8.3 \end{array}$
248+25 Toe		$\begin{array}{r} 27.8 \\ 7.0 \\ \hline \end{array}$	-28.0	$\begin{array}{r} 28.3 \\ 7.0 \\ \hline \end{array}$

249+50 Toe

249+70 H.B.



Add for Holes

$$\begin{array}{l} 5.0 \times 5.0 \times 10.0 = 248 \text{ cu.} \\ 4.0 \times 7.0 \times 15.0 \end{array}$$

+90	-0.30	$\begin{array}{r} -2.3 \\ 10.5 \\ \hline \end{array}$	-2.4	$\begin{array}{r} -1.7 \\ 9.6 \\ \hline \end{array}$
250+15		$\begin{array}{r} -3.7 \\ 12.6 \\ \hline \end{array}$	-4.5	$\begin{array}{r} -4.7 \\ 14.1 \\ \hline \end{array}$
+50		$\begin{array}{r} -2.3 \\ 10.5 \\ \hline \end{array}$	-2.8	$\begin{array}{r} -3.0 \\ 11.5 \\ \hline \end{array}$
+85	✓	$\begin{array}{r} -2.0 \\ 10.0 \\ \hline \end{array}$	-2.2	$\begin{array}{r} -3.6 \\ 12.4 \\ \hline \end{array}$
251		$\begin{array}{r} -5.0 \\ 14.5 \\ \hline \end{array}$	-6.0	$\begin{array}{r} -8.0 \\ 19.0 \\ \hline \end{array}$
+25	527906	$\begin{array}{r} 0.0 \\ 8.0 \\ \hline \end{array}$	-0.8	$\begin{array}{r} -2.2 \\ 10.3 \\ \hline \end{array}$

Areas Cub. Yds.

Exc Emb Exc Emb

1332.98

4086.9

Sta 246 + 28 ft to 248 + 25

Emb 4896.4 Cub. Y.

809.5 made from

4896.4 Cuts. mat.



58.1 249 + 50 ft to 251 + 40

Emb 495

156.71

72.2 156.8 made from cut East

24.8 338.4 from cut Sta 253

38.12

59.1

89.48

90.0

49.35

60.7

44.24

52.8

146.00

74.5

00

15.02

1.0

2.8

495.0

Section 5

Station	Grade	L	C	R
251+40	5279.02	$\frac{+0.6}{8.3}$	+0.4	$\frac{0.0}{8.0}$
+50		$\frac{+1.4}{8.7}$	+0.7	$\frac{0.5}{8.3}$
251+85		$\frac{+2.1}{9.1}$	+0.9	$\frac{0.0}{8.0}$
252+25		$\frac{+4.2}{10.1}$	+3.5	$\frac{+3.1}{9.6}$
+45	530	$\frac{+3.5}{9.8}$	+2.8	$\frac{+3.1}{9.6}$
+55		$\frac{0.0}{8.0}$	00	$\frac{0.0}{8.0}$
+63		$\frac{0.0}{8.0}$	-1.0	$\frac{-1.9}{9.9}$
252+80		$\frac{+5.4}{10.7}$	+4.0	$\frac{0.0 - 3.0}{7.0 \quad 11.5}$
253+05		$\frac{+5.9}{11.0}$	+3.3	$\frac{0.0}{8.0}$

Siding on L - 15' Centers

+30 5278.45 $\frac{+9.0}{12.5}$ +8.5 $\frac{+7.5}{11.8}$

Areas Cub. Yds
Exc. Emb. Exc. Emb.

5.66 00

1.0

3.6

13.55

251+25 to 252+55

Exc. 171.3 Solid Rock

19.2

Haul 562 West from
" 80 from 252+35 to 251

16.09 00

59.1

= 110 yds haul

63.68

43.4

53.56

9.9

136.2

00 00

35.1 1/2 5.5

171.3

2.3

00 15.60

13.5

3.3

5.6

64.29 00

55.5

54.95

103.8

169.28

358.7

531.2

Section 5

Station Grade (R.B.) L C R

253 +75 5278.33 $\begin{array}{r} +11.0 \\ (9.5) 15.0 \end{array}$ +11.3 $\begin{array}{r} +11.5 \\ 13.8 \end{array}$

254 $\begin{array}{r} +10.3 \\ (11.0) 16.2 \end{array}$ +9.4 $\begin{array}{r} +9.6 \\ 12.8 \end{array}$

+NS 05278.17

+37 $\begin{array}{r} 0.0 \\ (14.7) 14.7 \end{array}$ 00 $\begin{array}{r} 0.0 \\ 8.0 \end{array}$

+40 $\begin{array}{r} -2.2 \quad -2.8 \\ (14.0) 17.3 \quad 14.0 \end{array}$ -2.3 $\begin{array}{r} -1.4 \\ 9.1 \end{array}$
+40 B.C. 1 x 3 x 24

+53 $\begin{array}{r} 0.0 \\ (16.3) 16.3 \end{array}$ -1.0 $\begin{array}{r} -4.4 \\ 13.6 \end{array}$

+60 $\begin{array}{r} +2.3 \\ (17.0) 18.2 \end{array}$ +0.7 $\begin{array}{r} 0.0 \\ 3.0 \end{array}$ -1.6 $\begin{array}{r} 9.4 \end{array}$

+85 $\begin{array}{r} +4.5 \\ (19.5) 21.8 \end{array}$ +1.3 $\begin{array}{r} 0.0 \\ 8.0 \end{array}$

Grade of
Side Track

255 $\begin{array}{r} +4.0 \\ (21.0) 23.0 \end{array}$ +2.2 $\begin{array}{r} +1.4 \\ 8.7 \end{array}$

+20 $\begin{array}{r} +2.6 \\ (21.8) 23.1 \end{array}$ +0.8 $\begin{array}{r} 0.0 \\ 8.0 \end{array}$

+NS 05279.17

+30 5277.86 $\begin{array}{r} +4.3 \quad 0.0 \\ (22.2) 24.4 \end{array}$ 1.0 -0.2 $\begin{array}{r} -2.2 \\ 10.3 \end{array}$

Areas		Cub. Yds.	
Exc.	Emb	Exc.	Emb
260.97		531.2	252+35 to 254+37
			Exp. 966.2 C.Y. Solid Rock
231.35		227.8	Haul 5. west from
			" 24.5 East "
			" 294 from 253+25 to 150 = 953
			" 594 + 253+85 to 266 = 727
			Total haul = 8170.
		158.5	
		917.5	
00	00	48.7	254.
		966.2	3.1
	55.69		
			20.7
00	30.35		
		2.5	43
26.97	3.20	41.8	1.0
			28.1
63.24	00		
		40.5	
82.47			
		45.6	
40.78	00		
		16.0	1.1
45.58	8.83		
		132.1	1.6
		178.5	2.7

made from cut west.

Deduct



Section 5

Station Grade (P.B.) L C R

2.55+45 527781 (23.0) $\frac{+4.5}{25.3}$ +1.1 $\frac{0.0}{8.0}$

+85 (23.0) $\frac{+3.3}{24.7}$ +2.9 $\frac{+1.9}{9.0}$

+95 (23.0) $\frac{+2.3}{24.2}$ +0.7 $\frac{0.0}{8.0}$

256 (23.0) $\frac{+2.2}{24.1}$ +0.3 $\frac{0.0}{1.0}$ $\frac{-1.4}{9.1}$

+15 $\frac{0}{23.0}$ $\frac{0}{25.1}$ +1.2 $\frac{0.0}{8.0}$

+30 (23.0) $\frac{+5.0}{25.5}$ +1.7 $\frac{+0.9}{8.5}$

+65 (23.0) $\frac{+3.7}{24.9}$ $\frac{+4.6}{10.0}$ $\frac{+1.8}{+2.9}$ $\frac{8.9}{8.9}$

+75 (23.0) $\frac{+5.4}{25.7}$ +0.5 $\frac{0.0}{8.0}$

257 05277917 (23.0) $\frac{+7.6}{26.8}$ +5.6 $\frac{+4.3}{10.2}$

+50 527720 (23.0) $\frac{+6.0}{26.0}$ +3.7 $\frac{+2.3}{9.2}$

Areas		Cub. Yds	
Exc.	Emb	Exc.	Emb
		178.5	

70.06 00

121.8

94.42

60.3

24.5

37.72 00

6.2 0.3

29.07 4.20

27.0 0.8

1.1

68.16 00

43.9

90.00

133.5

115.92

Deduct from Quantities

94.7

34.5

70.53

129.0

208.20

325.5

143.32

91.8

243.7

1268.1

Section 5

Station Grade (R.B.) L C R

258 52.77.05 (23.0) $\frac{+5.0}{20.5}$ +3.1 $\frac{+2.2}{9.1}$

+50 (23.0) $\frac{+7.1}{26.6}$ +4.9 $\frac{+3.8}{9.9}$

259 (23.0) $\frac{+8.8}{27.4}$ +6.1 $\frac{+4.6}{10.3}$

+50 (23.0) $\frac{+8.6}{27.3}$ +6.1 $\frac{+4.8}{10.4}$

260 (23.0) $\frac{+9.1}{27.6}$ +6.8 $\frac{+5.8}{10.9}$

+25 (23.0) $\frac{+10.3}{28.2}$ +7.6 $\frac{+6.6}{11.3}$

+70 (21.8) $\frac{+7.4}{25.5}$ +5.0 $\frac{+3.9}{10.0}$

261 0.5276.15

261+10 (20.0) $\frac{+4.5}{22.3}$ +3.9 $\frac{+2.5}{9.3}$

+27 (18.3) $\frac{0.0}{18.3}$ 0.0 $\frac{0.0}{8.0}$

14' R.B. $\frac{1}{2}$:1 Slope

+70 5275.94 (13.0) $\frac{-9.7}{27.6}$ -11.5 $\frac{-13.9}{27.9}$

Area	Cu Yds
Exc. Emb	Exc. Emb
119.93	^{1268.1} x
186.28	283.5 Sta 254+53 to 261+29 Exc 3348.0 Cu yds class 254+53 to 258 = 984.0 389.7 class $\frac{1}{3}$ S.R. 328.0 $\frac{2}{3}$ Lo.R. 656.0 x
234.59	258 to 259+25 = 814.5 Cu. class S.R. - 814.5 433.0 259+25 to 261+27 = 1549.5 class $\frac{1}{4}$ S.R. = 387.4 $\frac{3}{4}$ Lo.R. = 1162.1 369 455.4
233.09	x Total Loose Rock = 1818.1 Cu. " Solid " = 1529.9 x
258.75	256.3 Haul 3.5 opposite " 298.5 East free 294.95 " 1950 from 259+40 to 62+90 = 6825. " 1096 " 256+85 to 265+70 = 9700 400.0 Total hauled to be = 16525. x
185.01	223.4 111
116.62	36.7 3746.1 398.1 Deduct - not taken out of Side Track 3348.0 343.1
00	00
430.82	1679 516.0

Section 5

Station Grade (R.B.) L C R

261+80 5275.91 (12.0) $\frac{-9.2}{25.8}$ -12.3 $\frac{-17.2}{32.8}$

262 (10.0) $\frac{-6.9}{20.4}$ -10.2 $\frac{-13.0}{26.5}$

+40 (7.0) $\frac{-3.8}{12.7}$ -2.8 $\frac{-4.7}{14.1}$

+85 $\frac{-11.6}{24.4}$ -11.8 $\frac{-14.2}{28.3}$

+95 -0.30 $\frac{-14.6}{28.9}$ $\frac{-15.5}{25.0}$ $\frac{-12.8}{17.0}$ -12.9 $\frac{-14.9-18.4}{20.0}$ 34.6

263+23 $\frac{-11.1}{23.7}$ $\frac{-15.6}{12.0}$ -17.0 $\frac{-12.4}{25.6}$

+50 $\frac{-7.3}{9.0}$ -3.0 $\frac{-3.2}{11.8}$

+65 $\frac{0.0}{8.0}$ -0.3 $\frac{-0.3}{7.5}$

+95 $\frac{+0.5}{8.3}$ 0.0 $\frac{0.0}{8.0}$

264 5275.26 $\frac{+0.7}{8.8}$ +0.2 $\frac{+0.2}{8.1}$

Areas Cub. Yds
Exc. Emb Exc Emb.

475.79

511.0

Sta 261+27 to 263+95

Emb 2474.9 Cutt.

294.4

Made from
Cuts at Ends

319.19

286.3

67.27

390.4

401.23

166.4

497.65

527.7

520.11

283.5

46.95

13.9

00

338

0.7

1.3

2.00

00

2474.9

0.7

5.29

1.4

Section 5

Rc Cross Sections

	L	C	R	
242+07				
+40				
+50				
+60				
+95	$\begin{array}{r} +13.9 \\ \hline 11.5 \end{array}$	$\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$	$\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$	$\begin{array}{r} +8.1 \\ \hline 14.0 \end{array}$ 3.0 x 6.0 x 10.0
243+25	$\begin{array}{r} +16.7 \\ \hline 12.2 \end{array}$	$\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$	$\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$	$\begin{array}{r} +9.3 \\ \hline 15.0 \end{array}$
+50	$\begin{array}{r} +16.2 \\ \hline 12.1 \end{array}$	$\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$	$\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$	$\begin{array}{r} +7.9 \\ \hline 13.6 \end{array}$ 2.0 x 10.0 x 10.0
244	$\begin{array}{r} +12.1 \\ \hline 11.0 \end{array}$	$\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$	$\begin{array}{r} 0.0 \\ \hline 8.0 \end{array}$	$\begin{array}{r} +4.7 \\ \hline 11.0 \end{array}$
+25				
+30				
+43				

245+20 Slip in L 1.0 x 5.0 x 25.0

245+55 " " 2.5 x 11.5 x 35.0

Areas Cuyds.
Exc.

0.0

0.5

1.20

1.1

4.50

4.8

21.60

6.7
153.1

Sea 242+07 to 244+43

214.65

270.1

Total Exc 1172.7 Cuy.
In Orig. Sect. 1081.0 "

271.53

236.4

Slips

91.7 "

239.06

7.4
363.3

153.33

115.5

Haul 354.6 East from

96.23

14.8

" 838 from 243+25 to 247+10

63.09

8.9

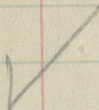
= 3220. Hauled 100'

10.1

0.0

1192.7
20. deducted

1172.7



4.6

37.3

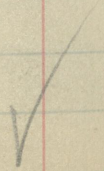
Section 5

Ditches

Stations	Size	EA.	L.R.	S.R.
255+30 Ditch for Box	3x3x120		40.0	
254+85 to 261+25 Surf Ditch on L	1.5x4x600	1333		
249+70 to 252+40 " "	2x25x70 1x5x190	357		129
255 to 261+25 Side Ditch on R		74.8	18.0	
Total Ditches		283.2	309	

Clearing

$$\begin{aligned}
 211 \text{ to } 253 - 70' \text{ wide} &= 294000' \\
 253 \text{ to } 260 - 90' &= 63000' \\
 260 \text{ to } 264 - 80' &= 32000' \\
 \hline
 893 \text{ Acres} &= 389000'
 \end{aligned}$$



5R

00

33

129

17

48 18.0

21 309

Section 5

Page	Acres Clearing	Excavation - Cub. Yards.			
		Total in Cut	Earth	Loose Rock	Solid Rock
↑					
Book N ^o 2	71	2811.9 ✓		379.3 ✓	2432.6 ✓
	73	613.1 ✓			613.1 ✓
	74	1726.0 ✓		274.0 ✓	1452.0 ✓
↓	75	114.0 ✓			114.0 ✓
	1	4553.9 ✓		312.1 ✓	4241.8 ✓
	2	200 ✓			200 ✓
	2	41.6 ✓			41.6 ✓
	4	2228 ✓			2228 ✓
	5	2738.2 ✓		203.3 ✓	2734.9 ✓
	6	852.3 ✓		26.1 ✓	826.2 ✓
	6	176 ✓			176 ✓
	7	1284.4 ✓		45.9 ✓	1238.5 ✓
	8	504.9 ✓		21.0 ✓	483.9 ✓
	10	171.3 ✓			171.3 ✓
	11	966.2 ✓			966.2 ✓
	13	3348.0 ✓		1818.1 ✓	1529.9 ✓
	16 8.93	314.1 ✓		283.2 ✓	309 ✓
	8.93	20500.3		3363.0	17137.3

Summary

17

Borrow-Cu.Yds.	Cu.Yds. Hauled 100'	Cu.Yds. Slope Wall
Earth		
Loose		
Rock		

6300 ✓

375 ✓

4245 ✓

22810 ✓

17950 ✓

3595 ✓

3220 ✓

460 ✓

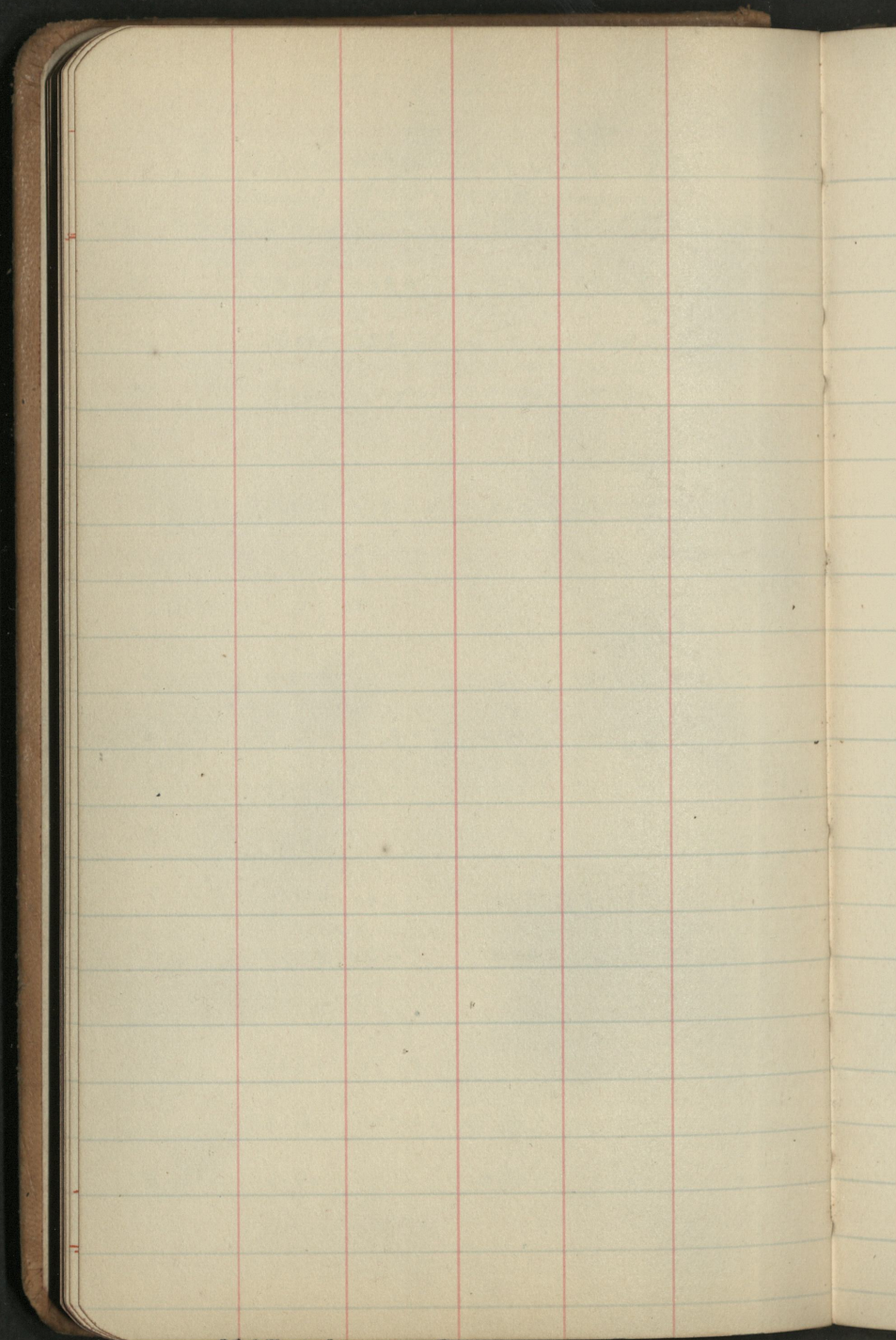
110 ✓

8170 ✓

16525 ✓

83760 ✓

✓ wall



18

Section 6

Station Grade

L C R

Clearing on Sec 6.

$$264 \text{ to } 268 - 100' \text{ wide} = 40000'$$

$$268 \text{ " } 300 - 70' = 22400$$

$$300 \text{ " } 302 - 90' = 18000$$

$$302 \text{ " } 317 - 70' = 105000$$

$$\text{Borrow Pit Left } 266 \text{ } 50 \times 100 = 5000$$

$$904 \text{ Acres} = 392000$$

264

$$\frac{+0.7}{8.8}$$

$$+0.2$$

$$\frac{+0.2}{8.1}$$

264 + 20 5275.20

$$\frac{+1.3}{8.7}$$

$$+1.0$$

$$\frac{+1.0}{8.5}$$

+30

$$\frac{0.0}{8.0}$$

$$0.0$$

$$\frac{0.0}{8.0}$$

+50

$$\frac{-0.3}{7.5}$$

$$-0.9$$

$$\frac{-1.3}{9.0}$$

+67

$$\frac{0.0}{8.0}$$

$$-0.3$$

$$\frac{-1.0}{8.5}$$

265 5274.96

$$\frac{+0.9}{8.5}$$

$$+0.8$$

$$\frac{0.0}{8.0}$$

14' RB 1 1/2' Slope

Areas Cub. Yds
Exc. Emb Exc. Emb

NOTE: — On Sections
6, 7 and 8 all backfilling
in Cuts was made from material
left in while excavating.

5.29

Sta 264 to 264+30 Exc 11.8 E

8.5

17.80

3.3

11.8

00

00

4.8

13.03

264+67 to 265+05 Exc 4.8 E

6.0

00

5.98

4.2

2.4

10.20

00

0.6

4.8

0.2

13.4

00

✓

Section 6

Station Grade

L C R

265 + 0.5 527484

0.0 - 0.2 - 0.5
8.0 7.8

+ 35

-6.0 - 4.5 - 5.0
16.0 14.5

+ 65

-21.5 - 9.3 - 13.4
39.2 27.1

+ 83

-23.0 - 15.4 - 17.2 - 22.2 - 29.8
41.5 7.0 - 15.7 7.0 32.0 54.7

266 + 25

-24.2 - 28.0 - 30.2
43.3 52.6

+ 55

-24.8 - 27.4 - 22.0 - 26.3
43.8 30.0 46.5

+ 68

-25.7 - 26.4 - 23.2
46.0 26.7 25.0 41.6

- 0.90

+ 80

-30.2 - 21.4 - 21.0 - 18.5
37.3 140.3 48

267 + 12

-15.6 - 16.6 - 14.6
30.4 28.9

+ 50

-12.7 - 12.8 10.0
26.0 22.0

268

527405

-38 - 37 - 35
12.7 12.4

16' R R 1/4 : 1 slope

Areas Cub. Yds.
Exc Emb Exc. Emb

0.0 3.33

107.13

430.45

861.62

1533.00

1305.86

1378.12

920.26

597.89

386.67

71.98

61.4 Sta 264+30 to 268+20
Emb. 7444.5 Cy.

From 266+40 to 268+20
298.7 = 3923.5 made from
Cut 268+20 - 770

1205.6 from 254+63 -
264+27

683.1 from 251+35 to 254+37
430.7 13.0 : 264+20
5.3 : 265

Balance 1614.0

less 5% 80.7

1862.5 Borrow 1533.3

1577.1 Class Borrow 25% S.R. = 3833
18% L.R. = 1150.0

646.1 Borrow Hauled 100' = 950

510.8

899.6

692.8

424.7

26.7
7444.5

✓

Section 6

Station Grade

L C R

268+20 5273.99

$\frac{0.0}{8.0}$ 00 $\frac{0.0}{8.0}$

+35

$\frac{+2.5}{8.6}$ +2.3 $\frac{+1.6}{8.4}$

+60

$\frac{+5.6}{9.4}$ +5.0 $\frac{+4.8}{9.2}$

+75

$\frac{+7.2}{9.8}$ +5.5 $\frac{+4.2}{9.1}$

269

-0.30

$\frac{+7.2}{9.8}$ +5.8 $\frac{+5.0}{9.3}$

+45

$\frac{+8.0}{10.0}$ +5.8 $\frac{+3.8}{8.9}$

+80

$\frac{+5.4}{9.3}$ +3.4 $\frac{+2.0}{8.5}$

270

$\frac{+6.6}{9.7}$ +6.2 $\frac{+4.9}{9.3}$

+15

$\frac{+10.0}{10.5}$ +8.0 $\frac{+6.8}{9.7}$

+50 5273.30

$\frac{+12.7}{11.2}$ +9.5 $\frac{+7.0}{9.8}$

Areas Cub. yds.
Exc. Emb Exc. Emb

00 00

Sta 268+20 to 273+70

Exc- 403.5

325.6 Subgrade

10.0 Slips 6980 See Page 58

35.95

Total Exc 5055.1 Cub. yds.

57.4 Class Slips $\frac{1}{2}$ LoR = 349.0
 $\frac{1}{2}$ SR = 349.0

88.10

Balance of cut SR = 4357.1

51.6 Total Loose Rock = 349.0
" Solid " + 706.1

97.58

93.4 Haul 1404 do wet gravel

" 2600 from 271+10 to 66+80
= 7180.

104.19

" 140 East gravel

171.8 " 397 from 273+10 to 74+50
= 556

102.01

" 1452 " 72+40 to 280+80
= 12204

104.9 Total Hauled 100' = 19940.

59.86

61.0

104.90

70.5

148.00

211.6

178.55

133.9
965.8

Section 6

Station Grade

270+70 527324

+11.8
11.0 +10.1 +7.6
9.9

+85

+12.0 +9.3 +7.0
11.0 9.8

271

-0.30

+12.5 +10.5 +7.9
11.2 10.0

+25

+15.7 +14.1 12.0
11.9 11.0

+50 5273.00

+17.7 +17.9 +16.4
12.4 12.1

272

+20.6 +19.4 +19.7
13.2 12.9

+25

+19.0 +19.0 +19.5
12.8 12.9

+50

-4.00

+17.2 +17.1 +18.4
12.3 12.6

273

+10.7 +12.6 +15.5
10.7 11.9

+35 5265.60

+6.7 +8.7 +10.4
9.7 10.6

Areas		Cub Yds.	
Exc.	Emb.	Exc.	Emb.

183.14

98.8

172.72

101.6

192.90

215.3

272.25

290.7

355.67

713.0

414.37

376.2

398.15

348.8

355.30

557.9

247.18

261.8

156.71

1' sub gr.

101.6
4031.5
325.6
<u>4357.1</u>

✓

Section 6

Station Grade

273+70 5264.20

$\frac{0.0}{8.0}$ 00 $\frac{0.0}{8.0}$

+90

$\frac{-6.6}{16.9}$ -6.6 $\frac{-4.6}{13.9}$

274

$\frac{-5.8}{15.7}$ -8.2 $\frac{-7.0}{17.5}$

Blind Drain

+25

$\frac{-6.2}{16.3}$ $\frac{-4.6}{12.0}$ $\frac{-7.3}{6.5}$ $\frac{-9.6}{15.0}$ $\frac{-8.0}{19.0}$

+45

$\frac{-5.3}{15.0}$ -9.0 $\frac{-10.1}{15.0}$ $\frac{-9.6}{21.4}$

+75

$\frac{-3.5}{12.2}$ -6.5 $\frac{-11.2}{15.0}$ $\frac{-10.3}{22.5}$

Rip Rap Drain 2x25x34

275

$\frac{-1.0}{8.5}$ -2.8 $\frac{-7.7}{18.6}$

16' RB 1/2:1 Slope

+10

$\frac{0.0}{8.0}$ -2.4 $\frac{-7.4}{18.1}$

+25

$\frac{+5.0}{10.5}$ $\frac{+3.3}{4.0}$ 0.0 $\frac{-6.8}{17.2}$

+40 5257.40

$\frac{+3.4}{9.7}$ 00 $\frac{-6.8}{17.2}$

-4.00

Areas		Cub. yds	
Exc.	Emb	Exc.	Emb

00	00		
----	----	--	--

52.2

140.84

59.6

180.92

157.6

159.44

273 + 70 + 275 + 65

 141.7 Emb 821.7
 made from
 cut mat

223.22

227.0

185.45

 6 Cu. Yds. Slope Wall
 for drain

117.4

68.34

23.2

00 57.22

5.1 22.5

27.32 23.80

11.4 13.2

13.60 23.80

10.6 7.3

27.1 821.7

Section 6

Station Grade

L C R

275 +65 5256.40

$\frac{+3.0}{9.5}$ +1.0 $\frac{0.0}{8.0}$

+80

$\frac{+4.0}{10.0}$ +2.8 $\frac{+1.7}{8.9}$

276

532+35

$\frac{+4.5}{10.3}$ +2.6 $\frac{+2.0}{9.0}$

+15

$\frac{+3.4}{9.7}$ +1.6 $\frac{+0.5}{8.3}$

+50

4.00

$\frac{+5.0}{10.5}$ +4.0 $\frac{+2.5}{9.2}$

+75

$\frac{+6.0}{11.0}$ +4.9 $\frac{+3.3}{9.7}$

277

$\frac{+5.0}{10.5}$ +4.2 $\frac{+3.2}{7.0}$ $\frac{+1.3}{8.0}$ $\frac{0.0}{8.0}$

+35

$\frac{0.0}{8.0}$ -3.0 $\frac{-6.7}{17.0}$

+75

$\frac{-0.8}{8.2}$ -2.3 $\frac{-4.1}{13.2}$

+90 524740

$\frac{0.0}{8.0}$ -0.7 $\frac{-1.8}{9.7}$

Areas Cub. Yds.
Exc. Emb Exc. Emb

20.75 00

27.1

Sta 277+10 to 277+35
Exc. 454.9 Cu. Y. S.R.

19.4

49.26

Haul 106.9 East from
" 240 from 276+40
37.2 to 78+90 = 480 yds Haul

51.09

22.5

30.00

64.4

69.40

72.8

87.91

73.2

70.20 00

30.3 26.3

00

60.95

346.9

108.0 S.S.

454.9

76.1

41.76

15.1

12.50

102

127.7

Section 6

Station Grade

L

C

R

278+15 5246.40

$\frac{-0.9}{8.3}$

0.0

$\frac{-1.8}{9.7}$

+45

$\frac{0.0}{8.0}$

-1.2

$\frac{-3.1}{11.7}$

+70

$\frac{-2.2}{10.3}$

-3.7

$\frac{-6.1}{16.2}$

+80

$\frac{-6.0}{16.0}$

-5.5

$\frac{-7.6}{18.4}$

278+90

$\frac{-6.9}{17.4}$

-8.7

$\frac{-11.2}{23.8}$

279+30

-4.00

$\frac{-0.9}{8.3}$

-2.5

$\frac{-6.2}{16.3}$

+75

$\frac{0.0}{8.0}$

-2.7

$\frac{-6.8}{17.2}$

279+95

$\frac{-2.5}{10.8}$

-4.7

$\frac{-8.2}{19.3}$

280+15

$\frac{-6.8}{17.2}$

-9.1

$\frac{-12.2}{25.3}$

280+30 5237.80

$\frac{-5.8}{15.7}$

-13.2

$\frac{-20.5}{37.8}$

Areas		Cub. Yds	
Exc.	Emb	Exc.	Emb.
	9.45		127.7
			17.8
	22.67		46.6
	78.07		40.8
	142.20		71.3
	242.62		220.9
	55.60		94.5
	57.82		61.5
	108.19		136.3
	259.88		195.8
	445.15		148.7
			1161.9

✓

Section 6

Station Grade

L

C

R

280+40 5237.40

-6.6

16.9

-9.2

-21.6

39.4

+70

-6.4

16.6

-9.5

-18.0

34.0

280+90

-8.0

19.0

-11.4

-15.0

15.0

-16.0

31.0

281+20

-5.9

15.9

-6.6

-7.2

17.8

+35

-8.0

19.0

-7.4

-6.8

17.2

+65

-4.00

10.8

23.2

-10.8

-8.5

19.8

281+90

-8.5

19.8

-11.6

-14.4

28.6

Boulder $3 \times 4 \times 40 = 1.60y$

282+23

-1.0

8.5

-1.2

-2.0

-4.6

6.0

13.9

16' RB $1/4:1/5$ slope

+28

0.0

8.0

-0.5

-2.0

10.0

+30 5229.80

+0.5

8.1

00

0.0

8.0

Areas Cub. Yds.

Exc. Emb Exc. Emb.

1161.9

357.68

379.7

325.75

277 to 282 + 30

265.3 Emb. 3025.1

Made from cuts
each way

390.30

304.1

157.06

95.2

185.74

269.7

299.75

305.8

360.87

237.9

28.40

1.6

3.7

0.0

1150

0.1

0.3

3025.1

2.00 00

2.6

2.7

Section 6

Station Grade

L C R

282+35 5229.60

+0.9
8.2 +2.0 8.4

+55

-400

+1.7
8.4 +0.6 8.0

+70

+1.7
8.4 00 -2.6
10.9

282+89 5227.44

283+60

+4.1
9.2 +2.6 8.0

284+08

+4.2
9.1 +1.3 8.0

14' RB 1 1/2 : 1 Slope

+60

8.0 -3.0 -8.9
20.4

+80

-384

-1.5
9.3 -5.2 -14.1
28.2

16' RB 1 1/4 : 1 Slope

285

8.0 -2.1 -10.2
22.3

+30

+3.3
8.8 +1.6 8.0 -0.8
8.2

286 5215.50

+3.3
8.8 +2.1 8.0

Areas Cub. Yds

Exc. Emb Exc. Emb

26.60

14.2

282 + 28% 284.60

Exc 287.7 Cub. Yds

11.72 00

5.1

1.7

Haul 81.2 ft

" 100 from 83 + 70%

82 + 10 = 160 yds Haul

6.80 9.10

79.9

10.1

41.16 00

11.8

61.4

27.92 00

17.9

47.3

284 + 0.8% 286

Emb. 250.2 Cub.

00

73.75

187.2

106.5 5.9

287.7

83.6

173.0 made from

Cut East

77.0 borrowed

$\frac{1}{2}$ Ea. = 38.5 Cub.

$\frac{1}{2}$ L.O.R. = 38.5 "

152.10

81.3

00 67.52

9.3

37.7

25.04 40

72.4

0.3

30.84

00

250.2

61.8

143.5



Section 6

Station Grade

L C R

286+80 5212.43

$\frac{+1.7}{8.4} +0.5 \frac{0.0}{8.0}$

14' RB $1\frac{1}{2}:1$ Slope

286+95

$\frac{0.0}{8.0} -1.0 -\frac{2.0}{10.0}$

287+ Box Culvert $1 \times 2 \times 34$

287+40

$\frac{-7.6}{18.4} -11.9 \frac{-12.0}{25.0}$

+45

$\frac{7.7}{18.6} -10.6 \frac{-13.9}{27.9}$

+65

$\frac{-4.2}{13.3} -7.2 \frac{-14.6}{28.9}$

288

$\frac{-0.2}{7.3} -2.6 \frac{-6.8}{17.2}$

+35

$\frac{-4.1}{13.2} -7.2 \frac{-12.9}{26.4}$

+482 05205.97

16' RB $1\frac{1}{4}:1$ Slope

+62

$\frac{0.0}{8.0} -1.9 \frac{-4.2}{13.3}$

+70

$\frac{+3.1}{8.8} +1.4 \frac{0.0}{8.0}$

289 5104.06

$\frac{+8.0}{10.0} +5.7 \frac{+4.5}{9.1}$

Areas Cub. Yds

Exc. Emb. Exc. Emb.

10.90 00

143.5

2.0

3.0

00 16.00

145.5

14.8 Ditch

160.3

285.7

326.83

60.1

322.05

Sta 286+80 to 288+70

Emb. 1015.7 cu.

199.9

made from Emb.
East-

217.72

177.6

56.35

167.5

202.06

118.5

0.0 34.93

2.4

3.4

24.16 00

1015.7

71.4

104.44

160.2

234.0

285 to 286+95

Total 160.3 Cu. Y.

Class $\frac{1}{2}$ to R = 80.2 $\frac{1}{2}$ S. R = 80.1

Haul 655 most gone

" 80 from 86+50

to 84+90 = 130 yds Haul

✓

Section 6

Station Grade

L

C

R

289+35 520276

+9.1
10.3

+7.8

+7.0
9.8

+55

+2.6
8.7

+4.5

+4.8
9.2

+65

+3.4
8.9

+1.5

0.0
8.0

+70

+4.0
9.0

+1.6

0.0
8.7

+75

+4.5
9.1

+1.8

0.0
8.0

290

-3.70

+7.0
9.8

+4.8

+2.9
8.7

+50

+10.6
10.7

+8.7

+6.4
9.6

290+95

+7.2
9.8

+3.4

0.0
8.0

291+20

+6.5
9.6

+3.9

+2.2
8.6

+55

519462

+6.1
9.5

+2.2

0.0
8.0

14' R B 1 1/2:1 Slope

Areas Cub. Yds

Exc. Emb Exc. Emb

234.0

142.79

Sta 288+62 to 291+78

78.8 Exc 1123.7 Cuyds Solid Rock

69.88

17.8

Haul 85.2 East from

" 151.3 West "

26.28 0.0

" 630.0 from

290+30 to 287+60 = 1703

5.0

0.1

Haul 13.3 from 91+90

to 93+10 =

27

waste 63.9

27.20 1.10

5.6

0.1

Total hauled 100' = 1730

0.2

33.39 0.0

54.3

84.00

222.5

156.31

179.5

59.06

59.9

70.29

73.9

43.65

0.0

124

943.7

SS.

180.0

1123.7

19.1

Section 6

Station Grade

L C R

291+78 5193.77

$\frac{0.0}{8.0}$ -3.8 $\frac{-6.1}{16.2}$

291+85

$\frac{-3.2}{11.8}$ -6.4 $\frac{-10.6}{22.5}$

292+07

$\frac{-1.5}{9.3}$ $\frac{0.0}{2.5}$ 00 $\frac{0.0}{8.0}$

16' R.B. $\frac{1}{4}$ to 1 Slope

+17

$\frac{0.0}{8.0}$ +2.0 $\frac{+2.7}{8.7}$

Boulder 2x3x6 = 13 cy.

+25

$\frac{+2.1}{8.5}$ +3.9 $\frac{+3.8}{9.0}$

-3.70

+50

$\frac{+4.6}{9.2}$ +4.1 $\frac{+4.4}{9.1}$

292+95

$\frac{+1.1}{8.3}$ +0.5 $\frac{0.0}{8.0}$

14' R.B. $\frac{1}{4}$ to 1 Slope

293+06

$\frac{0.0}{8.0}$ -1.0 $\frac{-1.9}{9.4}$

+55

$\frac{-3.5}{11.4}$ -4.5 $\frac{-6.7}{15.4}$

294 5185.56

$\frac{-3.3}{11.1}$ -4.6 $\frac{-6.0}{14.5}$

Areas Curb Yds

Exc. Emb Exc. Emb.

0.0 67.33

19.1

291455 to 292417

Emb 110.7 Made

28.3 from Cut Met-

151.01

6.29

0.0 3.37

3.8

0.4

110.7

27.50 0.0

Sta 292407 to 293406 Exc. 200.0
12.6 Curb yds Solid Rock

57.73

1.3 Haul 64 East per

60.8 180 from 9240 to 9346 = 100% Haul

73.52

68.3

8.48

0.0

1.2

2.1

148.0

0.0

15.35

52.0

5.5.

200.0

101.0

96.00

157.9

93.53

120.3

381.3



Section 6

Station Grade

L

C

R

294+25 5184.63

$\frac{-6.9}{15.6}$

-6.9

$\frac{-8.2}{17.3}$

+50

$\frac{-11.0}{20.8}$

-12.3

$\frac{-10.6}{20.3}$

Box Culvert 2X3X32

+60

$\frac{-9.8}{19.3}$

-13.2

$\frac{-13.5}{23.9}$

+75

$\frac{-11.9}{21.9}$

$\frac{-9.4}{11.0}$

$\frac{-16.8}{28.0}$

294+90

$\frac{-15.1}{25.9}$

-18.3

$\frac{-20.0}{32.0}$

295+10

-3.70

$\frac{-4.6}{12.8}$

-4.1

$\frac{-4.0}{5.0}$ $\frac{-7.4}{7.0}$ $\frac{-12.5}{22.6}$

+25

$\frac{0.0}{8.0}$

-0.3

$\frac{-3.7}{11.6}$

16' R.B. 1/4' 1 Slope

+30

$\frac{+0.6}{8.2}$

+1.1

$\frac{0.0}{8.0}$

Boulder 3X3X3 = 1 cy.

+55

$\frac{+7.4}{9.9}$

+4.4

$\frac{+2.7}{8.7}$

+90 5178.52

$\frac{+5.9}{9.5}$

+7.7

$\frac{+9.6}{10.4}$

Areas Cub. Yds.

Exc. Emb. Exc. Emb.

381.3

166.36

Su 292+956 295+30

229.0 Emb. 1561.3 Cut.

328.37

Made from cuts

128.7 at ends.

366.67

205.2

371.98

284.6

652.54.

290.5

131.71

41.0

00

15.89

0.7

1.0

11.31

00

1561.3

1.0

42.9

81.82

142.5

138.62

278.9

466.0

✓

Section 6

Station Grade

L C R

2 296+30 5177.04

+13.2
11.3 +12.5 +11.6
10.9

+65 -3.70

+18.3
12.6 +16.4 +14.2
11.6

297 05174.45

+18.0
12.5 +17.4 +16.5
12.1

297+15

+50

+15.5
11.9 +13.1 13.9
11.5

298

+8.3
10.1 +6.4 +8.2
10.1

299 +25

+9.3
10.3 +6.2 +3.9
9.0

+55 -3.84

+2.3
8.6 +2.0 +1.4
8.4

+65

+4.2
9.1 +1.1 0.0
8.0

+70

+5.0
9.2 +1.6 0.0
4.0 9.0

+73 5167.81

+5.0
9.2 +2.1 0.0
8.0

Areas

Cub. Yds.

Exc. Emb Exc. Emb.
4.66.0

237.95

302.3

228.44

537.5

352.02

403.7

270.87

371.8

130.64

112.6

112.63

80.2

31.80

10.7

26.21

0.0

5.2

0.1

30.56

2.40

3.8

0.1

8.2

38.06

0.0

753

23.69.1



Section 6

Station	Grade	L	C	R
2 299	5166.77	$\frac{+8.4}{10.1}$	+0.2	$\frac{+48}{9.2}$
+35		$\frac{+10.0}{10.5}$	+7.7	$\frac{+6.2}{9.6}$
299+80		$\frac{+8.6}{10.2}$	+7.8	$\frac{+4.6}{9.2}$
300+10		$\frac{+1.9}{8.5}$	+1.0	$\frac{0.0}{8.0}$
2 +20	-3.84	$\frac{0.0}{8.0}$	-0.8	$\frac{-1.1}{8.7}$
2 +50		$\frac{-3.2}{11.8}$	-5.3	$\frac{-8.0}{19.0}$
301		$\frac{-13.6}{27.4}$	-20.3	$\frac{-27.6}{+8.4}$
+10.8	5158.68			
+27		$\frac{-7.6}{18.4}$	-12.6	$\frac{-19.7}{24.0}$ $\frac{23.6}{42.4}$
+50	-4.00	$\frac{-7.8}{18.7}$	-12.0	$\frac{-15.2}{14.0}$ $\frac{-16.5}{31.8}$
+75	5156.11	$\frac{-10.0}{22.0}$	-11.7	$\frac{-16.4}{31.6}$

Areas Cub. Yds

Exc.	Emb.	Exc.	Emb.
		2369.1	
112.63		Sta 295+55 to 300+20	
		Excavate 3131.8	Cub. Yds
		165.1	Solid Rock
142.19		Haul 1831 wet for	
		" 780 from 296+50 to 294+60 = 1485	
		225.5	" 1700 " 297+65 to 301+10 = 5865
128.46		" 178.7 East from	
		Total hauled 100' = 7350	
		802	
15.85	00		
		1.9	1.3
		2841.8	
00	10.53	290.0	55.
		3131.8	
			73.0
			9578
			712.2
			✓
			391.1
			376.6
			272.2
			2784.2

Section 6

Station	Grade	L	C	R
302	5155.11	$\frac{-6.1}{17.1}$	-6.7	$\frac{-9.1}{20.7}$
16' R.B. 1/4:1 Slope				
+25		$\frac{0.0}{8.0}$	-0.6	$\frac{-1.1}{8.7}$
+35		$\frac{+2.4}{8.6}$	+0.8	$\frac{0.0}{8.0}$
+50		$\frac{+3.5}{8.9}$	+2.7	$\frac{+1.1}{8.3}$
302+60 ²				
+70		$\frac{+1.8}{8.5}$	+1.0	$\frac{+0.3}{8.1}$
303		$\frac{+6.8}{9.7}$	+5.6	$\frac{+4.6}{9.2}$
+06	5150.87			
+15		$\frac{+9.5}{10.4}$	+8.0	$\frac{+5.8}{9.5}$
+40		$\frac{+10.8}{10.7}$	+8.5	$\frac{+6.0}{9.5}$
+70		$\frac{+10.8}{10.7}$	+8.1	$\frac{+5.1}{9.3}$
304	5147.40	$\frac{+7.5}{9.9}$	+6.5	$\frac{+5.1}{9.3}$

4.00

-3.68

Areas		Cub. yds	
Exc.	Emb	Exc.	Emb.
	181.93		2784.2
			88.3
00	8.86		
		2.0	1.1
			<u>2873.6</u>
16.24	00		Sta 300 + 10 to 302 + 35
		16.1	embankment 2873.6 Cub yds
41.62			made from Auto track
		21.6	way.
16.70			
		64.0	
98.52			
		66.5	✓
140.80			
		136.0	
153.05			
		165.4	
144.60			
		143.0	
112.80			
		<u>177.9</u>	
		792.5	

Section 6

Station Grade

L

C

R

304+50 5145.56

$\frac{+7.1}{9.8}$

+4.4

$\frac{+2.6}{8.7}$

305

$\frac{+6.4}{9.6}$

+4.9

$\frac{+3.5}{8.9}$

+10

$\frac{+7.6}{9.9}$

+6.3

$\frac{+5.4}{9.3}$

+30

$\frac{+6.8}{9.7}$

+5.9

$\frac{+4.5}{9.1}$

+50

$\frac{+5.8}{9.5}$

+4.5

$\frac{+4.5}{9.1}$

306

-13.68

$\frac{+3.4}{8.9}$

+1.7

$\frac{+0.5}{8.1}$

+30

$\frac{+2.9}{8.7}$

+0.7

$\frac{0.0}{8.0}$

+55

$\frac{+4.9}{9.2}$

+2.7

$\frac{+0.6}{8.2}$

+75

$\frac{+2.8}{8.7}$

+2.4

$\frac{+1.4}{8.4}$

+90 5136.73

$\frac{0.0}{8.0}$

00

$\frac{0.0}{8.0}$

Areas Cub. Yds

Exc. Emb Exc. Emb.

792.5

79.50

152.2

84.93

Sta 302+25 to 306+90

86.6 Exc 1467.5 Cub. Yds.

112.48

Class $\frac{1}{2}$ L.R. = 733.8 Cub. Yds. $\frac{1}{2}$ S.R. = 733.7 " "

78.9

100.66

Have 90 yds mat for
" 992 " East "

68.0 " 245 from 303+30 to 40 = 400

" 855 " 304+60 to 7+75 = 2690

83.05

Total Hauled 100 = 3090

104.7

30.05

26.4

17.45

29.1

45.49

30.7

87.32

10.4

1329.5

00

00

138.0 138.5

1467.5

1596

Sta 302 to 307
Surface ditch on left
1.5 x 4 x 500 = 1111 Cub. Yds.
Class $\frac{1}{2}$ E = 555.0
" " L.R. = 55.6

✓

Section 6

Station Grade

L

C

R

307+30 5135.26

$\frac{-7.8}{18.7}$

-6.8

$\frac{-11.7}{24.6}$

+472 5134.63

+50

$\frac{-8.6}{19.9}$

-11.1

$\frac{-12.6}{25.9}$

Box Culvert 2'x3'x34'

+75

$\frac{-5.3}{15.0}$

-6.6

$\frac{-6.6}{16.9}$

308

$\frac{-1.2}{8.8}$

-0.7

$\frac{-1.1}{8.7}$

+40

$\frac{-5.9}{15.9}$

5.4

$\frac{6.4}{16.6}$

+80

$\frac{-9.2}{20.5}$

-8.2

$\frac{-8.7}{20.0}$

308+90

$\frac{-9.3}{21.0}$

$\frac{-11.2}{17.0}$

$\frac{-8.9}{22.0}$

309+10

$\frac{-7.8}{18.7}$

-10.8

$\frac{-13.3}{27.0}$

+60

$\frac{0.0}{8.0}$

-1.9

$\frac{-3.5}{12.3}$

309+71 5125.68

16' RB 1/2' 1' Slope

+75 5125.53

$\frac{+3.0}{9.5}$

+1.3

$\frac{0.0}{8.0}$

4.00

Areas

Cub yds.

Exc. Emb Exc Emb

159.6

215.47

201.4

328.39

306+90 to 309+75

Emb 1677.2

220.1

made from cuts
at endo-

146.92

74.6

14.18

107.4

130.80

265.8

228.00

94.0

279.65

222.8

320.63

326.1

0.0 31.54

4.3

5.9

263.8

0.0

1677.2

54.4

58.7

Section 6

Station Grade

L

C

R

310 5124.61

+6.3
11.2

+5.2

+3.6
9.8

+20

+4.8
10.4

+4.7

+3.8
9.9

+60

0.0
8.0

0.0

0.0
8.0

+65

-0.5
7.8

-0.5

-0.6
7.9

16' R.B. 1/4 11 Slope

+80

0.0
8.0

+0.5

0.0
8.0

311

89.8
-3.68

+3.2
8.8

+2.2

+1.6
8.4

+50

+5.1
9.3

+4.3

+3.1
8.8

312

+4.8
9.2

+4.0

+3.1
8.8

+35

+4.9
9.2

+5.0

+4.6
9.2

312+57 5115.15

0.0
8.0

+0.8

+1.5
8.4

Areas

Cub. Yds.

Exc.

Emb.

Exc.

Emb.

94.20

58.7

309+60 to 310+60

Exc 212.4 Cub. Yds. S.R.
hauled west gate

65.3

82.11

60.8

184.8

00

00

27.6 1/2 SS.

212.4

0.7

00

7.78

0.7

2.1

2.8

4.00

00

15.6

310+60 to 312+60

38.12

Exc 445.0 Cub. Yds.

Solid Rock

101.7 Haul 385 from 311+80 to 309

71.72

= 1080 Hauled 100'

129.0

67.60

98.2

84.00

39.3

12.56

00

385.0

60.0 1/2 SS.

0.6

445.0

Section 6

Station Grade

L

C

R

Exc

312+60 5115.04

$\frac{-1.4}{9.1}$

-1.2

$\frac{0.0}{8.0}$

+70

$\frac{-8.4}{19.6}$

-7.1

$\frac{-3.2}{11.8}$

312+75

$\frac{-7.5}{18.3}$

-7.2

$\frac{-7.2}{8.0}$

$\frac{6.0}{16.0}$

Box Culvert 2x3½x34

313+10

$\frac{-2.6}{10.9}$

-4.0

$\frac{-6.3}{12.0}$

$\frac{10.6}{22.9}$

16' R.B. ¼ : 1 Slope

+40

$\frac{0.0}{8.0}$

-0.3

$\frac{-1.7}{9.6}$

+45

$\frac{+2.5}{8.6}$

+1.5

$\frac{0.0}{8.0}$

+70

$\frac{+9.8}{10.5}$

+7.9

$\frac{+5.6}{9.4}$

314

$\frac{+9.7}{10.4}$

+8.8

$\frac{+8.2}{10.1}$

+40

$\frac{+5.0}{9.3}$

+4.5

$\frac{+5.6}{9.4}$

314+65 5107.50

$\frac{+4.9}{9.2}$

+4.6

$\frac{+3.7}{8.9}$

89.68

Areas Cub Yds.

Exc. Emb Exc. Emb

0.0

15.16

0.6

312+57 to 313+45

31.0 Emb 302.0

152.07

Made from Cut

30.3 East-

175.53

179.0

100.54

60.6

0.0

8.59

1.4

0.5

302.0

22.45

0.0

75.3 313+40 to 316+04

140.21

Excavate 647.4 Cub yds
Solid Rock

167.8

161.86

Haul 132.4 West for
" 22.0 East "

182.4

" 100 from 313+90 to 312+80 = 110

84.48

" 220 " 314+40 to 316+20 = 600

Total Haul 100 = 710

74.3

76.03

63.8

565.0

Section 6

Station Grade

L

C

R

315+05 5106.03

$\frac{+1.3}{8.3}$

+0.6

$\frac{0.0}{8.0}$

+15

$\frac{+1.6}{8.4}$

$\frac{0.0}{2.5} - 0.6$

$\frac{-1.6}{9.4}$

+50

$\frac{+2.0}{8.5}$

$\frac{0.0}{4.0} - 1.3$

$\frac{-5.4}{15.1}$

16' RB 1/4:1 S/slope

+80

$\frac{0.0}{8.0}$

-1.3

$\frac{-4.8}{14.2}$

315+90

$\frac{+4.1}{9.1}$

+2.2

$\frac{0.0}{6.0}$

$\frac{-3.9}{10.0}$

$\frac{-5.3}{15.0}$

316+04

$\frac{0.0}{8.0}$

-0.6

$\frac{-8.4}{15.0}$

$\frac{-9.1}{20.7}$

316+147 05101.99

+25

$\frac{-10.6}{22.9}$

-11.8

$\frac{-13.0}{26.5}$

+50

$\frac{-7.9}{18.9}$

-9.2

$\frac{-11.7}{24.6}$

+75

$\frac{-4.0}{13.0}$

-3.1

$\frac{-3.4}{17.1}$

316+95 5098.78

$\frac{-4.3}{13.5}$

-5.9

$\frac{-6.9}{17.4}$

Areas

Cub. yds

Exc. Emb. Exc. Emb

565.0

10.09 00

2.7 1.1

4.40 9.17

5.4 26.2

4.00 31.32

1.5 34.8

00 31.23

3154056 317

4.1 7.6 Emb 779.2

133.01 9.60

Made from Cut
mat - and cut in
Sec 7

5.7 17.4

00 57.44

584.4

63.0 125.9

647.4

167.8

374.06

297.6

268.70

154.4

64.80

72.3

779.2

Sta 316+35 to 317
 Pipe 18" or 24" diameter
 1 x 3 x 65 = 7.2 Cub yds.

✓

Section 6

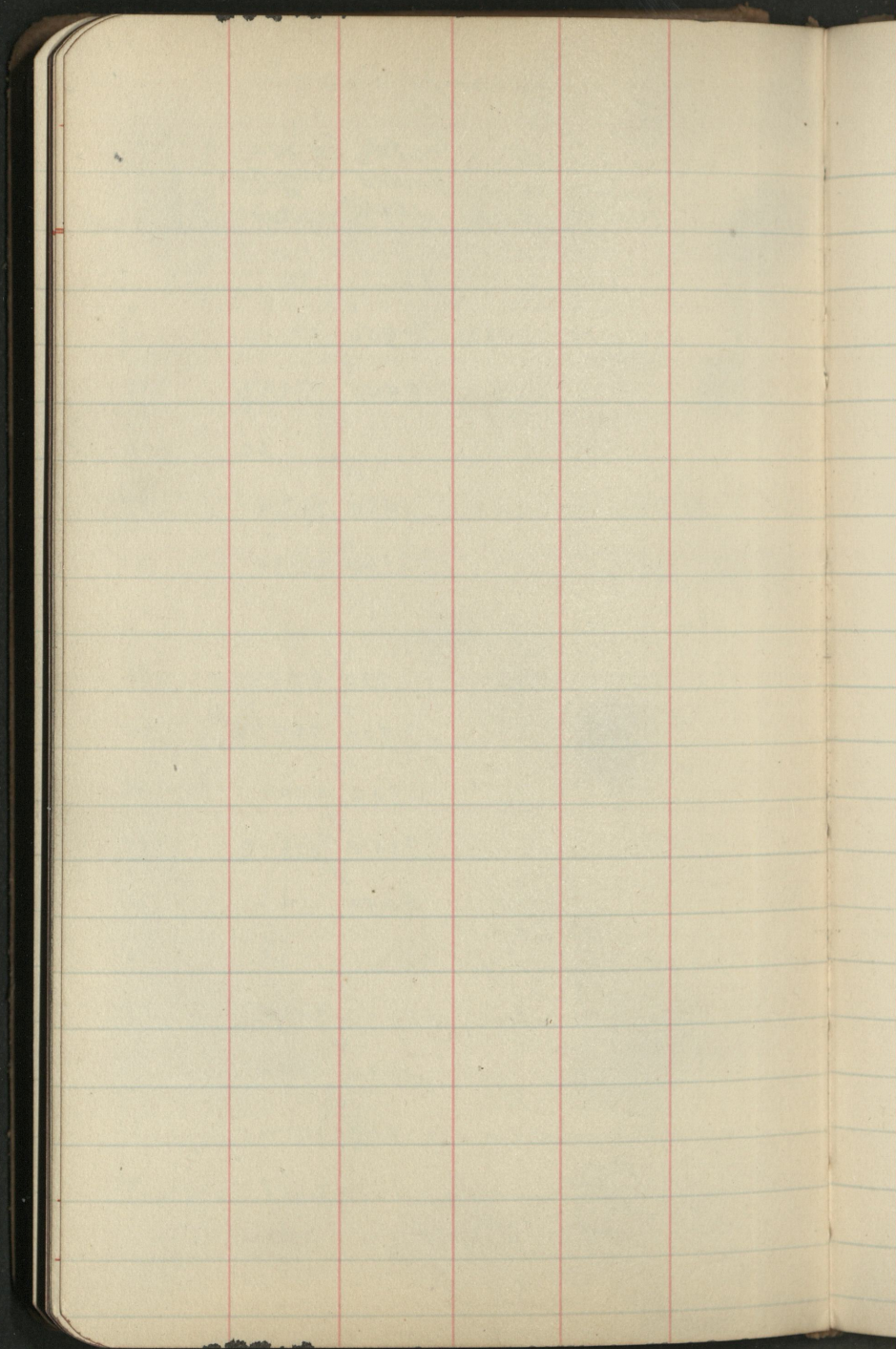
Page	Acres Clearing	Excavation Cub. Yds.			
		Total in Cut	Earth	Loose Rock	Solid Rock
19	904	11.8	✓	11.8	✓
19 20		4.8	✓	4.8	✓
21		5055.1	✓	3490	4706.1
23					
24		454.9	✓		454.9
27		287.7	✓		287.7
27					
28		160.3	✓	80.2	80.1
29		1123.7	✓		1123.7
30		200.0	✓		200.0
33		3131.8	✓		3131.8
35		1467.5	✓	733.8	733.7
35		111.1	✓	55.5	55.6
37		212.4	✓		212.4
37		445.0	✓		445.0
38		647.4	✓		647.4
39					
	904	13313.5	721	1218.6	12022.8

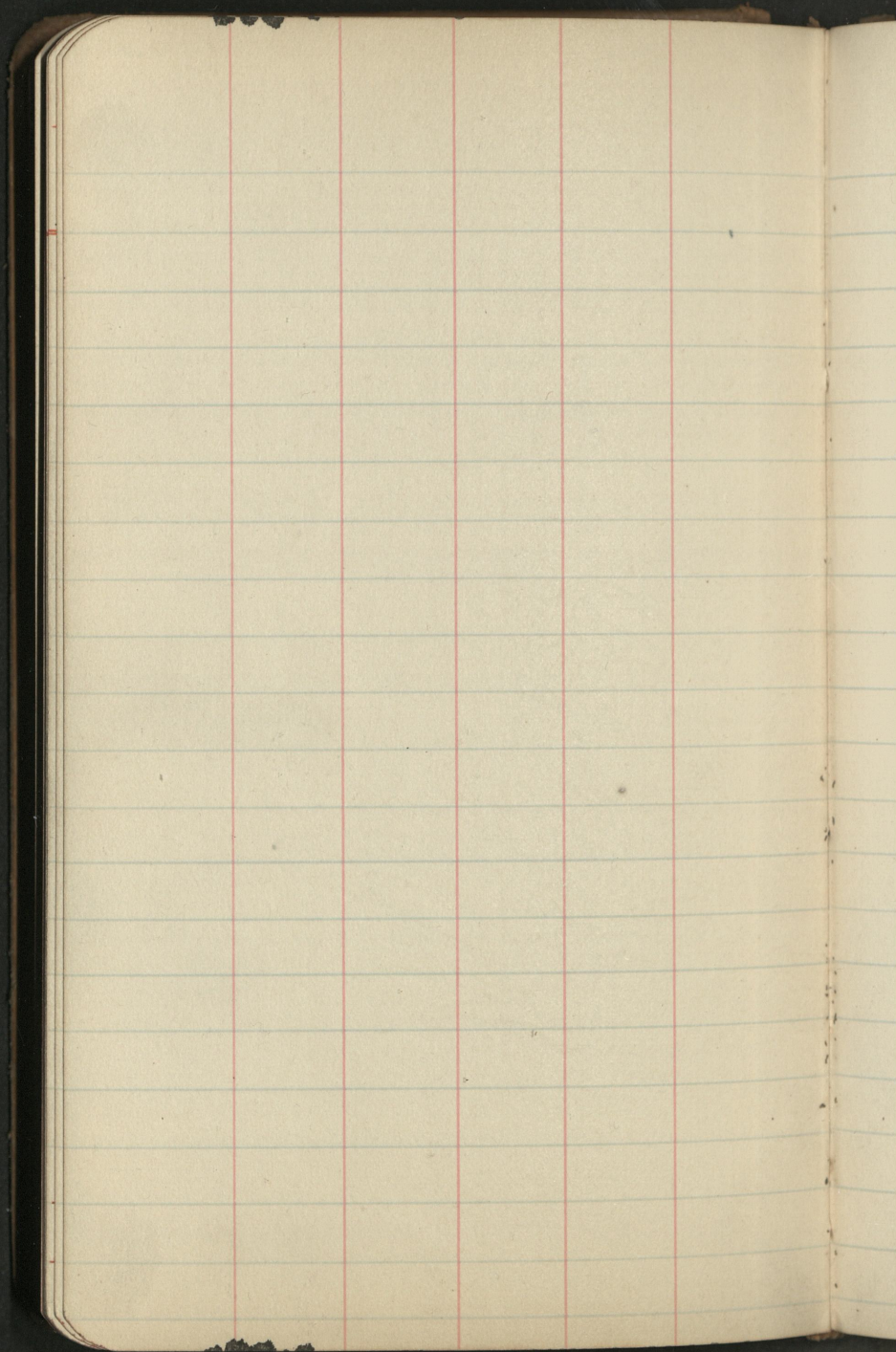
719.3 719.3

Summary

Borrow Cu.Yds.			Cu.Yds.	Cu.Yds
Earth	Loose Rock	Solid Rock	Hauled 100'	Slope Wall RipRap

	✓ 11500	✓ 3833	✓ 950	
			✓ 19940.	
				✓ 60
			✓ 480.	
			✓ 160	
✓ 38.5	✓ 38.5			
			✓ 130	
			✓ 1730	
			✓ 100.	
			✓ 7350.	
193			✓ 3090.	
			✓ 1080.	
			✓ 710	
				✓ 7.2
38.5	1188.5	3833	35720.	13.2





42

Section 7

Henrietta Spur.

Station	Grade	L	C	R
331+30 Main Line		0.0		
= 0 Spur		7.0		
+40		$\frac{-6.6}{16.9}$	$\frac{0.0}{4.8}$	
+60		$\frac{-5.9}{15.9}$	$\frac{-5.9}{13.0}$	$\frac{0.0}{1.0}$
+90		$\frac{-2.7}{11.1}$	$\frac{-3.3}{5.0}$	0.0
+110		$\frac{0.0}{6.0}$	-0.6	$\frac{-0.6}{6.0}$
+30		$\frac{+2.0}{7.0}$	+1.5	$\frac{0.0}{6.0}$
+50		$\frac{+3.0}{9.5}$	+2.3	$\frac{+1.5}{8.7}$
2		$\frac{+2.3}{9.1}$	+1.8	$\frac{+1.4}{8.7}$

Bogg's Spur

354+50 Main Line		0.0		
= 0 Spur		7.0		
+50		$\frac{0.0}{7.0}$		
0+85		$\frac{-1.3}{9.0}$	0.0	
1		$\frac{-1.7}{9.6}$	0.0	
+25		$\frac{-1.1}{8.7}$	-0.8	$\frac{0.0}{7.0}$
+50		$\frac{-1.3}{9.0}$	-0.8	$\frac{0.0}{7.0}$
+85		$\frac{0.0}{6.0}$	+0.3	$\frac{+0.8}{6.4}$
2+25		$\frac{+1.0}{6.5}$	+1.9	$\frac{+2.6}{7.3}$

Areas
Cut Fill Excav Emb'dt

	0.0		3.6
	7.26		12.1
	25.52		25.8
	21.01		9.8
0.0	54.0	6.5	1.3
17.75	0.0	21.0	52.6
38.93		64.7	
30.92		92.2	

Exc. 92.2 Cub yds.
Class 40% S.R. = 36.9
60% S.R. = 55.3

	0.0		2.0
	4.55		2.9
	59.5		7.4
	10.13		9.8
0.0	10.95	1.8	4.7
4.26	0.0	20.9	
23.91		22.7	26.8

Exc. 22.7 Cub yds to 10.8

Section 7

Station Grade

L C R

14' RB 1/2:1

316+95 5098.78

$\frac{-43}{135}$ -59 $\frac{-69}{174}$

317+20

$\frac{-36}{124}$ -47 $\frac{-69}{174}$

+45

004-
-40

$\frac{-16}{94}$ -27 $\frac{-45}{138}$

317+65

$\frac{-24}{106}$ -36 $\frac{-59}{159}$

318+20

$\frac{-25}{108}$ -40 $\frac{-47}{141}$

318+21 5093.74

318+60

$\frac{-39}{129}$ -56 $\frac{-97}{216}$

319+05

$\frac{00}{80}$ -10 $\frac{-27}{111}$

+35

89E-
-

16' RB 1/2:1

$\frac{+28}{94}$ +13 $\frac{00}{80}$

320

$\frac{+54}{107}$ +42 $\frac{+29}{95}$

+50 5085.31

$\frac{+58}{109}$ +46 $\frac{+33}{97}$

Areas		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.

130.36

1098

106.78

Sta 317 1/2 319+35

738 Emb 691.6

52.67

Made from Cut
East

48.0

76.75

154.6

75.00

162.4

144.20

136.0

00

19.00

83

7.0

691.6

22.51

00

118.1

75.62

147.6

83.78

151.9

425.9

✓

Section 7

Sta Station Grade

L C R

316 321 5083.47

$\frac{+55}{108}$ +44 $\frac{+33}{97}$

317 +50

$\frac{+54}{107}$ +39 $\frac{+27}{94}$

322

$\frac{+39}{110}$ +41 $\frac{+28}{94}$

317 +50

$\frac{+44}{102}$ +30 $\frac{+19}{90}$

318 322+92

$\frac{+13}{87}$ +06 $\frac{00}{80}$

318

14' RB 1 1/2' : 1

318 323+05

$\frac{00}{80}$ -06 $\frac{-14}{91}$

319 +10

$\frac{-06}{79}$ -11 $\frac{-18}{97}$

+20

$\frac{00}{80}$ -05 $\frac{-23}{105}$

16' RB 1 1/2' : 1

3 +40

$\frac{+25}{93}$ +11 $\frac{00}{80}$

+65

$\frac{+46}{103}$ +32 $\frac{+20}{90}$

+873 05072.90

-368

Areas		Cub Yds.	
Exc.	Emb.	Exc.	Emb.
80.30		425.9	Sta 319+05 to 323+05 Cu 990.26.
		140.6	Class 1/2 Lo Rock +95.1 Cu
71.60			1/2 Solid " 495.1 "
		137.2	Have 80 yds mat free
76.62			" 11.2 " East "
			" 785 ftm 321+20 to 317+40 = 2980
		121.0	
54.00			
		119.9	
10.21	00		
		1.6	1.6
		87.62	
00	10.03	114.0	SS.
		<u>990.2</u>	2.6
	18.08		
		5.7	
00	12.67		
		4.8	3.1
			13.0
19.52	00		
		35.6	
57.28		87.1	
		127.5	

made from cut West

Section 7

Sto	Station	Grade	L	C	R
31	324	5072.39	$\frac{+5.0}{10.5}$	+4.3	$\frac{+3.4}{9.7}$
317	325		$\frac{+0.5}{8.2}$	+0.4	$\frac{0.0}{8.0}$
			14' R B 1 1/2' I		
	+10	-4.0	$\frac{0.0}{8.0}$	-0.4	$\frac{-0.6}{7.9}$
317	+25		$\frac{-1.4}{9.1}$	-1.6	$\frac{-1.8}{9.7}$
31	+45		$\frac{-7.0}{17.5}$	-6.7	$\frac{-5.5}{15.3}$
318	+73	5065.47	$\frac{-17.2}{32.8}$	-17.6	$\frac{18.5}{10.0} \frac{-14.0}{28.0}$
31	+85		$\frac{-12.1}{25.2}$	-16.4	$\frac{-18.4}{10.0} \frac{-15.5}{30.3}$
31	326		$\frac{6.0}{16.0}$	-15.3	$\frac{-19.2}{10.0} \frac{-20.5}{30.0} \frac{-18.0}{34.0}$
	+25	-36.8	$\frac{-1.9}{14.4}$	-6.9	$\frac{-12.6}{25.9}$
3	+50		$\frac{-5.2}{14.8}$	-5.6	$\frac{-6.0}{16.0}$
	+75	5061.72			

Areas.		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.
77.03		127.5	323 + 20% 325 + 10
			Excavate 333.0 Cub yds
		152.4	Class $\frac{1}{2}$ Lo Rock = 166.5
			$\frac{1}{2}$ Solis = 166.5
52.4	00		
		0.6	0.7 Haul 70.5 fast gm
		280.5	" 210 from
00	5.28	52.5	323 + 85 to 325 + 55
		333.0	= 360 Hauled 100'
	262.4		
			66.6
	153.63		
			613.7
	674.84		
			350.3
	586.50		
			524.7
	546.90		
			345.9
	200.28		
			150.8
	125.44		
			154.0
			221.5

Section 7

Station	Grade	L	C	R
31 327	5060.80	$\frac{-85}{198}$	-63	$\frac{-113}{240}$
31 +50		$\frac{-85}{198}$	-74	$\frac{-91}{207}$
328		$\frac{-154}{30.1}$	-126	$\frac{-108}{150} \frac{-112}{23.8}$
31 +50	8040.0	$\frac{-164}{316}$	$\frac{192}{150}$	$\frac{-180}{200} \frac{-162}{313}$
31 +65	896.8	$\frac{-150}{295}$	$\frac{185}{100}$	$\frac{-210}{385}$
31 329		$\frac{95}{213}$	-12.0	$\frac{-160}{310}$
31 +35		$\frac{-94}{211}$	-12.0	$\frac{-140}{280}$
+50		$\frac{-138}{277}$	$\frac{-146}{240}$	$\frac{-128}{262}$
3 +75		$\frac{96}{214}$	-129	$\frac{-157}{150} \frac{-160}{310}$
330	5049.75	$\frac{-72}{17.8}$	-97	$\frac{-130}{26.5}$

Areas		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.
		24155	
	20727		Exc Channel in Borrow Pit on Left 32554 haul into false berm 95.0 Cub yds S.R. ✓
	21145		586.3
	42175		325% 332+38
		10478	Emb 8552.2
	70991		325% 332+50 = 6172.7 308.5 made from
		415.1	Cut mat balance 586.42 less 2% 117.2 Borrow 5746.9
	78462		769.8 Class 60% L.R. = 3448.2 40% E. = 2298.8
	40305		324+50% 332+38 = 2279.5
		505.3	264. Made from Cut East balance 2115.5 less 2% 42.3 Borrow 2073.2
	37650		2452 Class 25% L.R. = 518.3 75% E. = 1554.9
	50621		441.7 Total Earth = 3853.7 " Loose Rock = 3966.5
	44773		Haul 1500 Cub yds 200' = 3000 hauls/100'
		3395	
	28555		Band has made wide - deduct only 140.3 2% for shrinkage ✓
		7094.2	

Section 7

Station	Grade	L	C	R
330+15	5049.20	$\frac{-7.3}{18.0}$	-18	$\frac{-10.3}{22.5}$

31	+58.4	0.5047.61	$\frac{-6.8}{17.2}$	-7.7	$\frac{-8.7}{20.0}$
----	-------	-----------	---------------------	------	---------------------

331		$\frac{-6.8}{17.2}$	-8.1	$\frac{-8.2}{19.3}$
-----	--	---------------------	------	---------------------

Double Box Culvert 2x3x38

31	+40	$\frac{-7.1}{17.6}$	-8.4	$\frac{-10.0}{22.0}$
----	-----	---------------------	------	----------------------

3	332	$\frac{-4.0}{13.0}$	-6.4	$\frac{-8.8}{20.2}$
---	-----	---------------------	------	---------------------

31	+25	1	$\frac{0.0}{8.0}$	-0.9	$\frac{-2.8}{11.2}$
----	-----	---	-------------------	------	---------------------

16" RB 1/2" 1

31	+38	$\frac{+2.1}{9.0}$	+1.3	$\frac{0.0}{8.0}$
----	-----	--------------------	------	-------------------

	+60	$\frac{+4.0}{10.0}$	+3.1	$\frac{+2.1}{9.0}$
--	-----	---------------------	------	--------------------

333		$\frac{+4.7}{10.4}$	+3.8	$\frac{+2.7}{9.4}$
-----	--	---------------------	------	--------------------

+50	5035.95	$\frac{+4.6}{10.3}$	+3.2	$\frac{+2.8}{9.4}$
-----	---------	---------------------	------	--------------------

Areas. Cub. Yds.
Exc. Emb. Exc. Emb.

70942

219.55

335.1

197.47

306.4

200.32

315.9

226.17

419.1

151.04

78.5

00 18.44

3.1 3.0

194.5 00

85522

337 + 25 to 335 + 55 Exc = 530.2

29.9 Class $\frac{1}{3}$ Earth = 176.8538.5 $\frac{1}{3}$ Loose Rock = 176.789.7 $\frac{1}{3}$ Solid = 176.7

67.22

Haul 112 yds west free

118.8 " 128 " 33 + 25 to 31 + 55 = 180

" 180 " 34 to 36 + 40 = 430

" 20 " East free

61.12

94.8 Total Hauled 100' = 610 Yds

336.3



Section 7

Station	Grade	L	C	R
334	5033.95	$\frac{+32}{96}$	+24	$\frac{+16}{88}$
335		$\frac{+12}{86}$	+06	$\frac{+04}{82}$
+03		$\frac{+1.0}{85}$	+05	$\frac{00}{80}$
		14' RB 1 1/2' !		
+55		$\frac{00}{80}$	-03	$\frac{-07}{81}$
336	-4.00	$\frac{-13}{90}$	-17	$\frac{-24}{106}$
337		$\frac{-40}{130}$	-42	$\frac{-45}{138}$
+40		$\frac{-67}{17.1}$	-79	$\frac{-72}{17.8}$
+70		$\frac{-14.2}{283}$	-131	$\frac{-12.6}{100} \frac{-10.4}{226}$
338		$\frac{-20.4}{376}$	-222	$\frac{-22.5}{120} \frac{-17.0}{325}$
+15	5017.35	$\frac{-19.2}{358}$	-230	$\frac{-22.6}{190} \frac{-19.6}{364}$

Areas.		Cub. yds.	
Exc.	Emb.	Exc.	Emb.
4128		976	
1144		11	
812	00		
		52	31
		440.2	
00	487	900	459
		530.2	
		287	
	2961		
		2141	
	8603		
		2019	
	18650		
		3410	
	42734		
		7624	
	94508		
		5378	
	99112		
		7136	
		28026	

✓

Section 7

Station Grade

L C R

338+35 5016.55 $\begin{array}{r} -146 \\ 289 \end{array}$ $\begin{array}{r} -210 \\ 120 \end{array}$ $\begin{array}{r} -234 \\ 280 \end{array}$ $\begin{array}{r} -214 \\ 391 \end{array}$

+55

$\begin{array}{r} -191 \\ 357 \end{array}$ $\begin{array}{r} -220 \\ -236 \\ 424 \end{array}$

Box Culvert 2x3 1/2 x 56

339

-400

$\begin{array}{r} -78 \\ 187 \end{array}$ $\begin{array}{r} -80 \\ 140 \end{array}$ $\begin{array}{r} -186 \\ 150 \end{array}$ $\begin{array}{r} -200 \\ 370 \end{array}$

+45

$\begin{array}{r} -40 \\ 130 \end{array}$ $\begin{array}{r} -158 \\ 137 \end{array}$

+80

$\begin{array}{r} 00 \\ 80 \end{array}$ $\begin{array}{r} -12 \\ 141 \end{array}$

16' RB 14'1"

+95

$\begin{array}{r} +20 \\ 85 \end{array}$ $\begin{array}{r} +11 \\ 80 \end{array}$

340 05009.95

+10

$\begin{array}{r} +27 \\ 87 \end{array}$ $\begin{array}{r} +20 \\ 83 \end{array}$

341

-350

$\begin{array}{r} +39 \\ 90 \end{array}$ $\begin{array}{r} +32 \\ 86 \end{array}$

342

$\begin{array}{r} +70 \\ 98 \end{array}$ $\begin{array}{r} +62 \\ 96 \end{array}$

+45

5001.37

$\begin{array}{r} +58 \\ 95 \end{array}$ $\begin{array}{r} +66 \\ 97 \end{array}$

Areas.		Cub Yds.	
Exc.	Emb.	Exc.	Emb.
	935.72		2807.6
			335+03% 339+95
			Emb'dt 5434.9 Cu y
	1008.55	7201	220 made from Cut West
			4023 " " " East
			Balance less
		1246.3	5% Shrinkage = 4572
			Borrowed
	4870.5		Class 60% LOR = 27432
			409 F.S. = 18288
		5382	4 haul 1000 yds 190 ft
			= 1900
	158.75		" 3572 yds 180' = 6430
		1222	Total Hauled 100' = 8330.
00	2971		
		32	55
			5434.9
17.07	00		Sta 339+80 to 342+70 Exp. 798.7 Cu
			339+80 to 41+25 = 2826
		139	Class 1/2 Earth = 141.3
			1/2 LOR = 141.3
33.00			41+25 to 42+35 = 416.3
			Class 1/4 Solid R = 104.0
		144.6	3/4 Loose R = 312.3
			42+35 to 42+70 = 99.8 Solid Rock
53.76			Total Earth = 141.3 Cu y.
			" Loose Rock = 453.6 "
		315.9	" Solid " = 203.8 "
116.82			Haul 85.7 West from
			" 177.5 East "
		1883	" 280 from 340+90 to 39+25 = 460
			" 170 " 41+90 to 43 = 190
109.12			Total Hauled 100' = 650
		46.3	
		712.2	

Section 7

Station Grade

L C R

342+65 5000.67

$\frac{00}{8.0}$ +0.7 $\frac{+25}{8.6}$

14' RB 1/2 : 1

+70

$\frac{-1.1}{8.7}$ -0.9 $\frac{00}{8.0}$

+85

$\frac{-65}{16.8}$ -4.1 $\frac{-24}{10.6}$

Box Culvert 2x3x40

342+95

$\frac{-10.0}{22.0}$ $\frac{-65}{9.0}$ $\frac{-44}{13.6}$

343+15

-3.50

$\frac{-8.7}{20.1}$ $\frac{-9.8}{17.0}$ $\frac{-8.0}{19.0}$

+40

$\frac{-7.0}{17.5}$ -10.7 $\frac{-11.6}{24.4}$

+60

$\frac{-3.0}{11.5}$ -5.6 $\frac{-8.2}{19.3}$

+73

$\frac{00}{8.0}$ -1.7 $\frac{-3.5}{12.3}$

16' RB 1/2 : 1

+80

$\frac{+2.6}{9.3}$ +0.8 $\frac{00}{8.0}$

343+93

4996.19

$\frac{+5.6}{10.8}$ +4.8 $\frac{+4.2}{10.1}$

Areas.		Cub. Yds.	
Exc	Emb.	Exc.	Emb.
15.81	00	71.22	
		1.0	0.7
		713.5	
00	1136	85.5	125.4
		798.7	
	87.32		27.4
			342 + 65 1/2 343 + 80
			Embank = 764.4 Cu. Yds.
			Made from cuts
			each way.
		442	
	151.48		
		1455	
	241.39		
		245.7	
	289.26		
		1536	
	125.44		
		373	
00	29.50		
		1.5	2.5
		656.9	
17.32	00	107.5	Extra width of Bank
		764.4	
		25.7	
89.36			
		118.1	
		145.8	

Section 7

Station	Grade	L	C	R
344+25	4995.07	$\frac{+65}{113}$	+58	$\frac{+51}{106}$
+80		$\frac{+54}{107}$	+48	$\frac{+44}{102}$
345+10		$\frac{+49}{105}$	+44	$\frac{+40}{100}$
+50		$\frac{+52}{106}$	+44	$\frac{+43}{102}$
346	-3.50	$\frac{+59}{110}$	+54	$\frac{+44}{102}$
+50		$\frac{+72}{116}$	+67	$\frac{+60}{110}$
347		$\frac{+64}{112}$	+76	$\frac{+80}{120}$
+45		$\frac{+41}{101}$	+47	$\frac{+46}{103}$
+60		$\frac{+31}{96}$	+26	$\frac{+11}{86}$
347+75	4982.82	$\frac{+32}{96}$	+30	$\frac{+26}{93}$

Areas.		Cub. Yds.	
Exc	Emb.	Exc	Emb.
109.91		145.3	
89.36		202.9	Sta 343+73 to 348+55 "Wearaway 1673.8 Cu. yds."
80.70			$343+73$ to $344+80 = 379.7$ Solid Rock
		94.5	$344+80$ to $46+25 = 533.6$ Class $\frac{1}{2}$ Earth = 266.8 " $\frac{1}{2}$ L.R. = 266.8 $346+25$ to $48+55 = 760.5$ Solid R.
83.76		121.8	Total Earth 266.8 Cub. yds. " Loose Rock 266.8 " " " Solid " 1140.2 " "
98.44		168.7	
			Haul 1995 west from " 42.3 East "
128.51		210.1	" 150 yds from 344+45 to 43+35 = 165. " 1140 from 346+45 to 350 = 4045
145.76		253.9	Total Hauled 180' = 4210
82.74		190.4	
40.60		34.2	
51.55		25.5	
		80.5	
		1527.8	

Section 7

Station Grade

L C R

348+45 4980.37

$\frac{10.8}{8.4}$ 109 $\frac{00}{8.0}$

+55

$\frac{00}{8.0}$ 00 $\frac{00}{8.0}$

14' RB 1 1/2 : 1

349

- 3.50

$\frac{-3.5}{12.3}$ -28 $\frac{-3.2}{11.8}$

+50

$\frac{6.3}{16.5}$ -66 $\frac{-7.8}{18.7}$

350

04974.95

$\frac{-10.4}{22.6}$ -106 $\frac{-10.6}{22.9}$

+40

- 2.71

$\frac{-11.8}{24.7}$ -116 $\frac{-11.7}{24.5}$

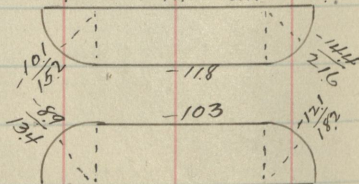
+70 HB

$\frac{-9.2}{20.8}$ -116 $\frac{-14.0}{21.0}$ $\frac{-13.2}{26.8}$

+88 Toe

351+04.5 Toe

60' Ple Br.



351+20 HB

$\frac{-7.7}{18.6}$ -93 $\frac{-12.4}{25.6}$

+50

4970.88

$\frac{-5.5}{15.3}$ -78 $\frac{-10.1}{22.2}$

Areas.		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.

10.58

1527.8

2.0

1529.8

00

00

144.0

89.

1673.8

47.7

5719

Sta 348+55 to 350+88

Emb 1753.1

1300.5 made from

206.2 Cut mat, balance

less 5% = 430

16551

borrowed

Class 1/2 Ea = 215.0

444.6

1/2 Lo R. = 215.0

31465

505.4

367.61

409.7

369.84

139.5

1753.1

84.2

275.88

264.8

20085

114.1

463.1



Section 7

Station Grade

L C R

351+65 4970.47

$\frac{-7.0}{17.5}$ -7.9 $\frac{-9.4}{21.1}$

352

$\frac{-4.9}{14.4}$ -6.2 $\frac{-7.4}{18.1}$

+50

$\frac{-2.7}{11.1}$ -3.7 $\frac{-6.7}{17.1}$

+80

$\frac{-1.9}{9.9}$ -2.4 $\frac{-4.5}{13.8}$

353

-2.71

$\frac{-1.1}{8.7}$ -1.3 $\frac{-2.2}{10.3}$

+17

$\frac{0.0}{8.0}$ 0.0 $\frac{-1.1}{8.7}$

16' RB 1/2:1

+40

$\frac{+1.8}{8.9}$ +1.0 $\frac{0.0}{8.0}$

354

$\frac{+4.2}{10.1}$ +3.3 $\frac{+1.6}{8.8}$

+50

$\frac{+6.0}{11.0}$ +5.2 $\frac{+3.8}{9.9}$

355 4961.39

$\frac{+7.0}{11.5}$ +5.7 $\frac{+4.6}{10.3}$

Areas		Cub. Yds.	
Exc	Emb	Exc	Emb
	209.87		463.1
			351+04 to 353+40
	143.80	2292	Emb 1017.2
			921.7 made from cut south, balance = 95.5 borrowed
	85.07	211.9	class 1/2 ear 47.8 1/2 L.R. 47.7 no shrinkage on account of extra width
	50.84	75.5	
		27.7	
	23.90	8.7	
00	3.85		
		44	11
15.65	00		1017.2
		77.8	
54.39			
		137.0	
93.54			
		188.9	
108.53		106.9	
		515.0	

✓

Section 7

Station Grade

L C R

355+25 4960.71

$\frac{+7.4}{11.7}$ +6.5 $\frac{+5.1}{10.6}$

+50

$\frac{+6.0}{11.0}$ +4.9 $\frac{+3.8}{9.9}$

356

$\frac{+6.7}{11.4}$ +5.0 $\frac{+3.9}{10.0}$

+40

$\frac{+7.7}{11.9}$ +5.6 $\frac{+4.3}{10.2}$

Deduct for wash $2.0 \times 4.6 \times 2.2 = 7.3$ cf

357

$\frac{+4.8}{10.4}$ +4.3 $\frac{+3.4}{9.7}$

+50

$\frac{+4.3}{10.2}$ +3.3 $\frac{+2.2}{9.1}$

358

$\frac{+1.7}{8.9}$ +1.3 $\frac{0.0}{8.0}$

14' RB 1 1/2 : 1

+30

$\frac{0.0}{8.0}$ -1.0 $\frac{-1.3}{9.0}$

+50

$\frac{-1.5}{9.3}$ -2.1 $\frac{-2.5}{10.8}$

359

4950.55

$\frac{-1.8}{9.7}$ -2.5 $\frac{-3.6}{12.4}$

Box Culvert 1 x 2 x 21

Areas		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.
122.48		57.50	Sta 353+17 to 358+30
		98.6	Excav. 1338.3 Cub. yds.
90.41			Class $\frac{1}{2}$ Earth = 669.2
			$\frac{1}{2}$ Lo. R. = 669.1
		172.5	
95.90			Haul 37.4 West from
			" 52.4 East "
		152.4	" 38.0 into road 400 ft = 150
			" 800 yds 355+20 to 51+80 = 2720
109.88			" 410 x 356+90 x 60+30 = 1406
			Total hauled 100' = 4270
		206.5	
76.01			
		124.0	
57.85			
		70.0	
17.78	00		
		66	48
		1345.6	
00	13.05	7.3	
		1338.3	
		178	
	35.11		
		75.6	
46.52		159.5	
		257.7	

✓

Section 7

Station Grade

L C R

360 4947.84

$\frac{-15}{9.3}$ -21 $\frac{-34}{12.1}$

361

$\frac{-0.7}{8.1}$ -15 $\frac{-28}{11.2}$

362

$\frac{-1.7}{9.6}$ -22 $\frac{-35}{12.3}$

363

$\frac{-0.9}{8.4}$ -33 $\frac{-42}{13.3}$

+45

2.71

$\frac{-0.7}{8.1}$ -25 $\frac{-5.0}{14.5}$

364

$\frac{-1.9}{9.9}$ -27 $\frac{-44}{13.6}$

+50

$\frac{-2.1}{10.2}$ -37 $\frac{-47}{14.1}$

365

$\frac{-2.8}{11.2}$ -49 $\frac{-73}{18.0}$

+30

$\frac{-2.9}{11.4}$ -50 $\frac{-70}{17.5}$

+65 4932.52

$\frac{-1.1}{8.7}$ -23 $\frac{-4.0}{13.0}$

Areas		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.
	39.62		857.7
		1229	
	26.72		358 1/2 370 Emb. 1948
			508.6 made from
		127.8	cut mat
			163.4 made from cut
	42.29		rust
			balance less 5%
			= 1212.4 borrowed
		177.7	362 to 365 Class
			Earth 610.5
	53.66		365 to 370 class
			Loose Rock 601.9
		84.9	
	48.20		
		103.9	
	53.78		
		113.5	
	68.75		
		162.6	
	106.89		
		118.8	
	106.90		
		97.0	✓
	42.80	59.7	
		1426.5	

Section 7

Stat Station Grade

L C R

36 366 4931.58 $\frac{-11}{8.7}$ -27 $\frac{-44}{136}$

36 +25 $\frac{-18}{9.7}$ -3.7 $\frac{-47}{141}$

36 +60 $\frac{-2.2}{10.3}$ -3.4 $\frac{-4.9}{144}$

36 +75 $\frac{-2.8}{11.2}$ -3.6 $\frac{-5.4}{151}$

Box Culvert 1x2x26

+ 367 $\frac{-14}{9.1}$ -3.1 $\frac{-5.5}{153}$

36 +50 $\frac{-0.9}{8.4}$ -2.8 $\frac{-6.8}{17.2}$

+ 367+70 $\frac{0.0}{8.0}$ -2.5 $\frac{-7.1}{17.7}$

3 368+15 $\frac{+2.7}{9.4}$ +0.3 $\frac{0.0}{1.0}$ $\frac{-6.1}{16.2}$

369 04923.45 $\frac{+4.8}{10.4}$ +1.3 $\frac{0.0}{4.0}$ $\frac{-0.8}{8.2}$

+ 369+50 $\frac{+3.6}{9.8}$ +1.2 $\frac{0.0}{3.0}$ $\frac{-2.7}{11.1}$

370 4922.34

Areas		Cub. Yds	
Exc.	Emb.	Exc.	Emb.
	49.36		149.26.5

53.8

66.78

86.6

66.84

367470 to 370

Exc. 148.6 Cub. Yds

39.7 Class 1/2 Earth 74.3

1/2 L. Rock 74.3

76.04

63.9

61.97

115.5

62.79

44.4

00

56.98

6.9

62.7

12.36

18.30

64.4

30.7

28.56

1.20

46.9

6.1

22.08

5.40

30.4

18.3

148.6 1948.2

✓

Section 6

Cross Section of Cut after work was done

Sta Sta L C R

3 268+20 to 268+75

268+75 $\begin{array}{r} +7.2 \\ 7.8 \end{array} \begin{array}{r} 0.0 \\ 8.0 \end{array} \begin{array}{r} 0.0 \\ 8.0 \end{array} \begin{array}{r} +4.2 \\ 9.1 \end{array}$

3 9 $\begin{array}{r} +7.2 \\ 10.0 \end{array} \begin{array}{r} 0.0 \\ 8.0 \end{array} \begin{array}{r} 0.0 \\ 8.0 \end{array} \begin{array}{r} +4.6 \\ 9.9 \end{array}$

+45 $\begin{array}{r} +8.4 \\ 11.5 \end{array} \begin{array}{r} 0.0 \\ 7.7 \end{array} \begin{array}{r} 0.0 \\ 7.2 \end{array} \begin{array}{r} +3.2 \\ 12.2 \end{array}$

3 +80 $\begin{array}{r} +6.1 \\ 10.0 \end{array} \begin{array}{r} 0.0 \\ 8.8 \end{array} \begin{array}{r} 0.0 \\ 7.6 \end{array} \begin{array}{r} +2.0 \\ 10.9 \end{array}$

270 $\begin{array}{r} +6.6 \\ 9.7 \end{array} \begin{array}{r} 0.0 \\ 8.2 \end{array} \begin{array}{r} 0.0 \\ 7.8 \end{array} \begin{array}{r} +4.6 \\ 10.6 \end{array}$

+15 $\begin{array}{r} +10.0 \\ 9.3 \end{array} \begin{array}{r} 0.0 \\ 8.3 \end{array} \begin{array}{r} 0.0 \\ 7.0 \end{array} \begin{array}{r} +6.8 \\ 11.0 \end{array}$

+50 $\begin{array}{r} +13.0 \\ 14.2 \end{array} \begin{array}{r} 0.0 \\ 8.5 \end{array} \begin{array}{r} 0.0 \\ 7.9 \end{array} \begin{array}{r} +6.8 \\ 13.2 \end{array}$

+70 $\begin{array}{r} +13.0 \\ 13.2 \end{array} \begin{array}{r} 0.0 \\ 8.4 \end{array} \begin{array}{r} 0.0 \\ 6.9 \end{array} \begin{array}{r} +7.5 \\ 15.0 \end{array}$

+85 $\begin{array}{r} +13.2 \\ 13.8 \end{array} \begin{array}{r} 0.0 \\ 8.5 \end{array} \begin{array}{r} 0.0 \\ 8.3 \end{array} \begin{array}{r} +7.0 \\ 15.3 \end{array}$

271 $\begin{array}{r} +13.4 \\ 18.0 \end{array} \begin{array}{r} 0.0 \\ 7.8 \end{array} \begin{array}{r} 0.0 \\ 8.8 \end{array} \begin{array}{r} +7.9 \\ 14.0 \end{array}$

+25 $\begin{array}{r} +15.2 \\ 14.2 \end{array} \begin{array}{r} 0.0 \\ 8.4 \end{array} \begin{array}{r} 0.0 \\ 7.5 \end{array} \begin{array}{r} +11.2 \\ 14.0 \end{array}$

+50 $\begin{array}{r} +18.0 \\ 16.5 \end{array} \begin{array}{r} 0.0 \\ 7.8 \end{array} \begin{array}{r} 0.0 \\ 7.9 \end{array} \begin{array}{r} +14.6 \\ 17.0 \end{array}$

272 $\begin{array}{r} +21.2 \\ 18.0 \end{array} \begin{array}{r} 0.0 \\ 8.1 \end{array} \begin{array}{r} 0.0 \\ 7.1 \end{array} \begin{array}{r} +20.1 \\ 14.3 \end{array}$

+25 $\begin{array}{r} +19.0 \\ 18.4 \end{array} \begin{array}{r} 0.0 \\ 10.2 \end{array} \begin{array}{r} 0.0 \\ 10.8 \end{array} \begin{array}{r} +21.4 \\ 17.6 \end{array}$

+50 $\begin{array}{r} +17.3 \\ 15.6 \end{array} \begin{array}{r} 0.0 \\ 8.6 \end{array} \begin{array}{r} 0.0 \\ 9.4 \end{array} \begin{array}{r} +20.1 \\ 15.2 \end{array}$

273 $\begin{array}{r} +11.0 \\ 12.6 \end{array} \begin{array}{r} 0.0 \\ 9.4 \end{array} \begin{array}{r} 0.0 \\ 8.6 \end{array} \begin{array}{r} +17.0 \\ 14.0 \end{array}$

+35 $\begin{array}{r} +6.8 \\ 11.2 \end{array} \begin{array}{r} 0.0 \\ 8.6 \end{array} \begin{array}{r} 0.0 \\ 8.8 \end{array} \begin{array}{r} +10.6 \\ 12.2 \end{array}$

+70 $\begin{array}{r} 0.0 \\ 8.0 \end{array} \begin{array}{r} 0.0 \\ 8.0 \end{array}$

Areas Exs. Cu. Yds.

	119.0
97.58	94.2
105.95	184.0
174.81	117.0
65.73	64.6
108.57	70.6
145.72	231.9
212.11	157.2
212.27	117.7
211.32	128.6
251.58	259.9
309.49	343.6
432.63	851.7
487.17	477.1
543.38	447.3
422.72	653.5
283.08	297.5
175.98	114.1
0.0	4729.5
	4031.5
	698.0

Total Exs.

Excess



Section 7.

Ditches

Stations		Size	Earth	Loose Rock	Solid Rock
317 to 318+95	Surface Ditch	$1 \times 3 \times 195 = 247$		19.7	2.0
318+90 to 322	"	$1 \times 3 \times 310 = 344$			
322 to 325	"	$1.4 \times 4.2 \times 350 = 762$	55.3	55.3	
339+80 to 342+50	"	$1.0 \times 3.5 \times 270$		35.0	
343	Ditch at end of Box car	$2.5 \times 4.0 \times 20$		7.4	
343+60 to 350+20	Surf. Ditch	$1 \times 4 \times 600 = 980$	49.0	49.0	
352	Ditch to bridge	$1.5 \times 5 \times 200$	55.5		
355 to 359+50	Surf Ditch	$1.0 \times 4.0 \times 450$	66.6		
354+50	" to Box car	$1.0 \times 5.0 \times 170$	31.6		
360 to 366	"	$1.0 \times 3.5 \times 600 = 778$	75.8		2.0
367 to 372+80	"	$2.8 \times 3 \times 580 = 516$	25.8	25.8	
353+20 to 358+20	Side Ditches in cut		37.0	37.0	
367+70 to 370	"			17.0	
			396.6	246.7	4.0

338+90 Rap/Rap at end of Box, 1.5 Cut

✓

Cleaning

324 to 332 — 120' wide = 96000 0'

337 to 341 — 75 " — 30000

347 + 358 — 80 " 88000

365 " 370 — 60 " 30000

560 Acres = 244000

Section 7

Page	Acres Cleared	Excavation - Cub. Yds.			
		Total in Cut	Earth	Loose Rock	Solid Rock
45		990.2 ✓		495.1 ✓	495.1 ✓
46		3330 ✓		1665 ✓	1665 ✓
47		950 ✓			950 ✓
43		922 ✓		553 ✓	369 ✓
48		530.2 ✓	176.8 ✓	176.7 ✓	176.7 ✓
50					
50		798.7 ✓	141.3 ✓	453.6 ✓	203.8 ✓
52		1673.8 ✓	266.8 ✓	266.8 ✓	1140.2 ✓
53					
54					
55		1338.3 ✓	669.2 ✓	669.1 ✓	
43		22.7 ✓		22.7 ✓	
56					
57		148.6 ✓	74.3 ✓	74.3 ✓	
59	560	646.8 ✓	396.6 ✓	246.2 ✓	40 ✓
	560	666.95 ✓	172.50 ✓	2626.3 ✓	2318.2 ✓

Summary

Borrow	Cu. Yds.	Cu. Yds.	Cu. Yds.
Earth	Loose Rock	Hauled 100'	Slope Wall Rip Rap

2980. ✓

360. ✓

3853.7 ✓

3966.5 ✓

3000. ✓

610 ✓

18288 ✓

27432 ✓

8330. ✓

650. ✓

4210. ✓

2150 ✓

2150 ✓

478 ✓

477 ✓

4270 ✓

610.5 ✓

601.9 ✓

1.5 ✓

6555.8 ✓

7574.3 ✓

24410. ✓

1.5 ✓

of
W.A.

Section 8

Station Grade

L C R

369+50

$\begin{array}{r} +36 \\ 98 \end{array}$ $\begin{array}{r} 00 \\ 12.30 \end{array}$ $\begin{array}{r} -27 \\ 111 \end{array}$

370 4922.33

$\begin{array}{r} +27 \\ 94 \end{array}$ 00 $\begin{array}{r} -41 \\ 132 \end{array}$

+50

$\begin{array}{r} +12 \\ 86 \end{array}$ $\begin{array}{r} 00 \\ 20 \end{array}$ -04 $\begin{array}{r} -34 \\ 121 \end{array}$

371

$\begin{array}{r} +06 \\ 83 \end{array}$ $\begin{array}{r} 00 \\ 60 \end{array}$ -13 $\begin{array}{r} -40 \\ 130 \end{array}$

372

$\begin{array}{r} +28 \\ 94 \end{array}$ +12 $\begin{array}{r} 00 \\ 65 \end{array}$ $\begin{array}{r} -02 \\ 73 \end{array}$

+15

$\begin{array}{r} +29 \\ 95 \end{array}$ +14 $\begin{array}{r} 00 \\ 80 \end{array}$

+50

$\begin{array}{r} +29 \\ 95 \end{array}$ +11 $\begin{array}{r} 00 \\ 80 \end{array}$

14' PB 1 1/2:1

+83

$\begin{array}{r} 00 \\ 80 \end{array}$ -15 $\begin{array}{r} -28 \\ 112 \end{array}$

373

04919.00

$\begin{array}{r} -32 \\ 118 \end{array}$ -5.0 $\begin{array}{r} -63 \\ 120 \end{array}$ $\begin{array}{r} -54 \\ 151 \end{array}$

Box Culvert 1x2x25

+15

0

$\begin{array}{r} -24 \\ 106 \end{array}$ -37 $\begin{array}{r} -61 \\ 162 \end{array}$

Areas Cub. Yds.
Exc. Emb. Exc Emb.

370 to 372 + 83 Euc 106.9
class $\frac{1}{2}$ Ea = 53.4 Cy.
 $\frac{1}{2}$ LoR = 53.5 "

1080 1435

133 269

360 1472

370 to 372 + 15

39 38.0 Emb 114.0 made
from cut alongside

60 2635

395 49.0

2074 .05

124 0.1

114.0

2385 00

292

2123 00

86 97

00 2420

106.9

406

10477

511

7933

999

201.3

Section 8

Station Grade

373+50 4919.00

L	C	R
$\frac{-22}{103}$	-36	$\frac{-58}{157}$

374

$\frac{-19}{99}$	-32	$\frac{-72}{178}$
------------------	-----	-------------------

+50

$\frac{-20}{100}$	-38	$\frac{-60}{160}$
-------------------	-----	-------------------

375

$\frac{-28}{112}$	-48	$\frac{-68}{150}$	$\frac{-87}{200}$
-------------------	-----	-------------------	-------------------

+30

$\frac{-43}{135}$	-64	$\frac{-90}{120}$	$\frac{-68}{172}$
-------------------	-----	-------------------	-------------------

376

$\frac{-09}{84}$	-22	$\frac{-43}{135}$
------------------	-----	-------------------

+15

$\frac{00}{80}$	-14	$\frac{-31}{117}$
-----------------	-----	-------------------

377

$\frac{+22}{91}$	+04	$\frac{00}{10}$	$\frac{-12}{88}$
------------------	-----	-----------------	------------------

16' R.B. 1/2 11

+15

$\frac{+31}{96}$	+16	$\frac{00}{80}$
------------------	-----	-----------------

377+70 4919.00

$\frac{+104}{132}$	+88	$\frac{+80}{120}$
--------------------	-----	-------------------

Areas Cub. Yds.
Exc. Emb. Exc. Emb.

201.3

74.80

372+5076377+15

139.9

Emb 1122.2 Cub.y.

76.17

36 made from bit & worst
280.0 " " " East

142.2

Balance less 5%

Borrow 796.7 L.R.

77.40

169.7

105.88

146.3

157.45

258.9

42.29

18.6

00 246.4

11.3

44.6

108.2

36.0

10.4

0.7

26.48

00

1122.2

✓

214.9

184.48

201.1

437.7

Section 8

Station Grade

L C R

378 4919.00

$\frac{+9.1}{12.6}$ +88 $\frac{+8.1}{12.1}$

+25

$\frac{+6.0}{11.0}$ +64 $\frac{+6.0}{11.0}$

+50

$\frac{+0.7}{8.4}$ +06 $\frac{0.0}{8.0}$

14' RB 1 1/2 : 1

+53

$\frac{0.0}{8.0}$ -06 $\frac{-0.8}{8.2}$

+75

$\frac{-4.0}{13.0}$ -65 $\frac{-10.6}{22.9}$

00

379

$\frac{-2.5}{10.8}$ -43 $\frac{-7.8}{14.0}$ $\frac{-10.7}{20.0}$ $\frac{-10.0}{22.0}$

+15

$\frac{-3.2}{11.8}$ -68 $\frac{-11.0}{14.0}$ $\frac{-10.6}{22.9}$

+35

$\frac{-1.3}{9.0}$ -33 $\frac{-11.0}{18.0}$ $\frac{-11.0}{22.0}$ $\frac{-12.0}{25.0}$

+80

$\frac{0.0}{8.0}$ -20 $\frac{-5.5}{15.3}$

16' RB 1/2 : 1

380 4919.00

$\frac{+2.6}{9.3}$ +07 $\frac{0.0}{8.0}$

Areas		Cub. Yds	
Exc.	Emb.	Exc.	Emb.
177.48		437.7	376+15 to 378+53 Exc. 689.0 Cub. Yds. 76+15 to 77+20 = 50.0 Lo. R. balance 639.0 S.R. 137.0
118.40			Haul 33.4 West fair " 19.0 East " " 200 from 377+45 to 76+75 = 340 58.4 " 210 " 377+85 to 79+25 = 300 Totals hauled 100' = 640
7.72	00		
		03	03
00	766	633.4	378+50 to 380 Exc. 935.4
		55.6	341.4 made from
		689.0	715 Cut Sea 381+20 balance from cuts at ends.
	167.77		132.2
	117.87		84.9
	187.77		113.5
	118.60		134.3
00	42.55		
164.6	00	41	105
			549.7
			388.7
		62.8	935.4
		66.9	

Extra width to put Cornishmans
Ditch

Section 8

Station	Grade	L	C	R
380+30	4919.00	$\frac{+5.8}{10.9}$	+5.8	$\frac{+34}{97}$
+43	0	$\frac{+1.9}{8.9}$	+0.9	$\frac{0.0}{8.0}$
	0	14' RB 1 1/2' : 1		
+50		$\frac{0.0}{8.0}$	-1.3	$\frac{-2.3}{10.5}$
+80		$\frac{-5.1}{14.7}$	-7.6	$\frac{-11.4}{9.0} \frac{-8.5}{19.8}$
381	4919.00			
+10		$\frac{0.0}{8.0}$	-0.7	$\frac{-3.1}{11.7}$
+20		$\frac{+4.7}{10.4}$	-2.4	$\frac{0.0}{8.0}$
		16' RB 1/2' : 1		
+30		$\frac{+8.0}{12.0}$	+4.8	$\frac{+3.0}{9.5}$
+50	-0.625	$\frac{+11.1}{13.6}$	+7.8	$\frac{+5.2}{10.6}$
382		$\frac{+13.2}{14.6}$	+8.6	$\frac{+5.1}{10.6}$
+50	4918.062	$\frac{+11.7}{13.9}$	+6.7	$\frac{+3.1}{9.6}$

Areas

Cub. Yds

Exc.

Emb.

Exc.

Emb.

9654

268

Hauled Mat

1481

00

13

17

00

2008

95.0

17.1

112.1

54.

161.7

380+43 1/2 381+20
 Embkt 570.0 Cuy.
 made from Cut
 last

270.92

1604

00

17.74

5.0

22

40.88

00

326.0

244.0

570.0

Extra for Ditch

253

95.60

945

159.58

315.9

18156

2958

137.93

1258

862.3

Section 8

Station Grade

L C R

382+83 4917.857

$\frac{+86}{12.3}$ +33 $\frac{00}{8.0}$

383

$\frac{+6.2}{11.1}$ +21 $\frac{00 - 25}{4.5 \quad 10.8}$

+25

$\frac{+6.0}{11.0}$ +28 $\frac{00}{8.0}$

+50

$\frac{+9.1}{12.6}$ +56 $\frac{+2.9}{9.5}$

384

$\frac{+9.8}{12.9}$ +71 $\frac{+4.9}{10.5}$

+50

$\frac{+11.4}{13.7}$ +90 $\frac{+7.0}{11.5}$

385

$\frac{+14.0}{15.0}$ +111 $\frac{+8.7}{12.4}$

+50

$\frac{+14.6}{15.3}$ +124 $\frac{+10.2}{13.1}$

386

$\frac{+13.2}{14.6}$ +110 $\frac{+9.5}{12.8}$

+45 4915.593

$\frac{+9.4}{12.7}$ +82 $\frac{+7.1}{11.6}$

-0.625

Areas. Cub. Yds.
Exc. Emb. Exc. Emb.

67.89 00

343 07

41.18 312

42.5 1.0

50.60 00

1.79

109.88

Sta 381+10 to 387+45
Exc 3714.3 Cub. Yds.

Class
 $381+10 \text{ to } 384 = 1332.05 \text{ R.}$

$384 \text{ to } 387+45 = 2382.3 \text{ C.Y.}$

Class 25% L.R. = 595.6 "

233.1

75% S. R. = 1786.7 "

141.87

Total Loose Rock 5956 C.Y.

Solid " 3118.7 "

304.5

187.00

Haul 235. West from

" 106, " "

" 240 from 381+85 to 388+55 = 312

398.0 " 284.5 " 382+20 to 379+20 = 853

" 266.0 " 385+15 " 389 = 10240

242.87

Total hauled 100' = 11405.

479.8

275.28

478.5

241.50

339.3

165.63

232.6

3479.2

Section 8

Station Grade

L C R

387 4915.250

$\frac{+43}{10.2}$ +35 $\frac{+28}{9.4}$

+38

$\frac{+0.5}{8.3}$ +03 $\frac{00}{8.0}$

14' R/B 1 1/2' I

+45

$\frac{0.0}{8.0}$ -0.3 $\frac{-0.8}{8.2}$

388

-0.625

$\frac{-5.0}{14.5}$ -5.0 $\frac{-5.1}{14.7}$

+50

$\frac{-17.8}{33.7}$ -14.1 $\frac{-11.8}{24.7}$

+75

$\frac{-23.6}{42.4}$ -17.4 $\frac{-15.4}{30.1}$

+85

$\frac{-23.6}{42.4}$ -23.5 $\frac{-18.5}{34.8}$

389

04914.00

$\frac{-18.6}{34.9}$ -23.0 $\frac{-24.6}{10.0}$ $\frac{-23.7}{42.6}$

Culvert of Br. ties 4 x 5

+30

0.32

$\frac{-13.4}{27.1}$ -17.0 $\frac{-24.0}{30.0}$ $\frac{-24.6}{43.9}$

+50

4913.84

$\frac{-13.0}{26.5}$ -15.8 $\frac{-21.2}{38.8}$

Areas Cub. Yds.
Exc. Emb. Exc. Emb.

6270

3479.5

472

445 00

04

04

00 523

35268

182.5

1/2 59.

37143

115.7

10835

577.5

51532

Sta 387+38 to 390+80

593.8 Emb. at 5479.8 Cul. 1/2

76725

3319.2 Made from
Cut mat

449.8 Made from cut emb.

337.4

balance 1410.8

less 5% 70.5

Borrow 1340.3

1054.45

590.1 class 1/2 earth = 670.1

1/2 Lo. R. = 670.2

1069.88

1025.6

776.15

522.9

635.7

548.1

4311.5

✓

Section 8

Station	Grade	L	C	R
389+75	4913.76	$\frac{-121}{252}$	-149	$\frac{-166}{240} \quad \frac{-206}{37.9}$
390+10		$\frac{-140}{280}$	-170	$\frac{-156}{6.0} \quad \frac{-128}{10.0} \quad \frac{-140}{280}$
+25		$\frac{-120}{250}$	-96	$\frac{-91}{207}$
+50		$\frac{-51}{147}$	-45	$\frac{-45}{138}$
		16' RB 1/2:1		
+80	0.52	$\frac{00}{8.0}$	00	$\frac{00}{80}$
391		$\frac{+28}{94}$	+24	$\frac{+21}{91}$
+50		$\frac{+70}{105}$	+65	$\frac{+56}{108}$
392		$\frac{+84}{122}$	+77	$\frac{+66}{113}$
+50		$\frac{+61}{111}$	+54	$\frac{+49}{105}$
+95	4912.65	$\frac{+04}{8.2}$	+04	$\frac{00}{80}$

Areas		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.

54836

4311.5

702.7

53580

230.3

29321

181.0

97.73

543

54798

00

00

1.5 390+80% 393 Exc. 740.8 Cub. Y.

class 25% Lg Rock = 197.7 "

75% S. " = 593.1 "

241.80

149.5

Haul 104.8 met far

" 100 'East "

119.63

" 520 from 391+95% 390+15

250.1 = 940 Hauled 100'

15047

234.1

10232

89.3

484

00

03

724.8

66.0 1/2 59.

790.8

Section 8

Station Grade

L C R

393 4912.64

00
8.0 -06 14
91

14' RB 1 1/2:1

+10

1.7
9.6 -24 31
117

Box Culvert 1x2x36

393+37 Back=
393+09 Ford

-7.8
18.7 -88 101
22.2

Add for wash 4.2x8.5x7.50 =

+15.5

-0.32

-14.6
28.9 -17.5 20.1
37.2

394

-9.0
20.5 -103 11.2
23.8

+80

00
8.0 -04 1.2
8.8

16' RB 1 1/4:1

+90

+1.3
8.3 +1.1 00
8.0

395 4912.00

+45

+7.7
9.9 +7.2 +6.8
9.7

396

0 0
0 0

+10.7
10.7 +9.8 +9.3
10.3

+25

4912.00

+10.2
10.6 +9.4 +8.4
10.1

Areas Cub. Yds.
Exc. Emb. Exc. Emb.

00 1003

0.6 Sta 392+95 to 394+90

Emb. 23400 Cub yds

9.7 120.0 made from
Cut West

497.8 from Borrow

Pit on Left

142.5 1252.6 from Cut East

469.6 from Cut Sta 401

24261

991 Borrow Pit on Left

802.8 measured 414.8 Cub.

69983

Class $\frac{1}{2}$ Ca = 207.4"

$\frac{1}{2}$ L.R. = 207.4"

8322

29884

4522

00 756

1.8 09

2340.0

14.16 00

1454

128.56

317.2

182.90

1642

171.69

1619

7905



Section 8

Station Grade

L C R

396+55 $\Delta 912.00$

$\frac{+8.0}{10.0}$ +6.7 $\frac{+5.7}{9.4}$

397+03

$\frac{+1.4}{8.4}$ +0.6 $\frac{0.0}{8.0}$

14' AB 1/2:1

+12

$\frac{0.0}{8.0}$ -0.8 $\frac{-1.8}{9.7}$

+50

$\frac{-5.3}{15.0}$ -7.4 $\frac{-11.1}{23.7}$

Box Culvert 1x2x36

398

0.0
0.0

$\frac{-15.3}{30.0}$ -18.3 $\frac{-23.5}{42.3}$

+05

$\frac{-17.2}{32.8}$ -21.6 $\frac{-25.4}{45.1}$

+20

$\frac{-14.7}{29.1}$ -17.8 $\frac{-20.2}{37.3}$

+50

$\frac{-8.8}{20.2}$ -11.0 $\frac{-12.6}{25.9}$

399

$\frac{-2.3}{10.5}$ -3.3 $\frac{-4.2}{13.3}$

+15

4913.00

$\Delta 912.00$

$\frac{0.0}{8.0}$ -0.9 $\frac{-2.2}{10.3}$

Areas		Cub. Yds.	
Exc.	Emb.	Exc.	Emb.
119.79		790.5	
		115.8	
10.52	00		
		1.2	1.5
		907.5	
00	13.38	136.3	increase by grade change
		68.2	
		1112.0	150.7
200.59			397+03 to 399+26
			Emb. 22706
797.35			924.0 Made from Cut East.
			165.5
990.42			473.2
713.11			578.6
328.45			361.5
620.2			21.7
00	159.4		21.6
		2698.3	
		427.7	Decrease cut change of grade
		2270.6	

Section 8

Station Grade

L C R

399+26 491200

+21
8.5 +12 00
8.0

16' RB 1/4, 1

+50

+54
9.4 +49 4.1
9.0

400

00 00

Siding on Left

+134
11.4 +12.5 12.0
11.0

+50

+196
12.9 +19.3 18.8
12.7

401

+41300
0 491200

RB on Left

+233
13.8 +22.6 22.3
13.6

+50

11.0 +20.8
16.2 +19.7 18.2
12.8

402

13.0 +14.5
16.7 +13.0 11.8
11.0

+50

090 - 040 -

+8.0
16.0 18.0 +5.8 4.8
9.2

+85

+32
16.0 16.8 +1.0 0.0
8.0

403

491120

16.0 0.0
16.0 -1.0 -2.1
10.6

Areas		Cub. Yds.	
Exc	Emb.	Exc	Emb.

1830	00	25	
------	----	----	--

451

8308

Sta 344+15 to 403 Euv. 4367.1

300.6 Class 30% L.R. = 1310.1

70% S.R. = 3057.0

24160

594.7 Haul 192.2 West for

" 145.5 East "

40064

" 1700 from 400+60% 398 = 4420.

" 391.3 " 401+10% 393.50 = 2975.

826.5 " 1810.1 401+75% 404+40 = 4795.

49202

Total Hauled 100' = 12190.

893.4

472.85

735.5

32150

4478

16208

129.7

3800 00

00 21.70

70	4.0
3982.8	
256.2	increase
128.1	1/2 59.61
4367.1	

80.1

Section 8

Station Grade P Bon L C R

403+30 4911.08 180 $\frac{-11}{19.7}$ -45 $\frac{-66}{16.9}$

404 220 $\frac{-46}{28.9}$ -93 $\frac{-138}{27.7}$

+25 220 $\frac{-46}{28.9}$ -9.7 $\frac{-141}{28.2}$

+50 220 $\frac{-42}{28.3}$ -88 $\frac{-122}{25.3}$
 0.20 0.40
 - -

Box Culvert 1x2x51

405 220 $\frac{-28}{26.2}$ -68 $\frac{-10.1}{22.2}$

+50 220 $\frac{-16}{24.4}$ -58 $\frac{-9.0}{20.5}$

406 4910.00 220 $\frac{-2.6}{25.9}$ -78 $\frac{-13.4}{27.1}$
 0 4910.00

+15 220 $\frac{-1.9}{24.9}$ -90 $\frac{-12.8}{26.2}$
 0 0

+50 220 $\frac{-4.8}{29.2}$ -98 $\frac{-10.0}{17.0}$ $\frac{-9.0}{20.5}$

407 4910.00 220 $\frac{-4.6}{28.9}$ -48 $\frac{-2.5}{10.8}$

Areas		Cub. Yds.	
Exc	Emb	Exc	Emb
	115.34		80.1
		618.9	
	362.08		40.2 + 85% 40.8 + 20
			Emb 359.32 Cub yds
		342.1	234.6 from Cut West
			150.8 " " East
	376.88		467.9 " Borrow Pit
			on left 403-407
		324.8	Balance less 5%
			= 599.4 Earth borrowed
	324.74		from waste bank
			300 feet left.
		511.3	Borrow Pit Measured
	230.71		387.4 Cub yds.
			Class $\frac{1}{2}$ Lo R = 193.7
		379.6	$\frac{1}{2}$ Ea = 193.7
	179.31		Total borrow
			Earth 793.1 Cub.
		427.3	Lo Rock 193.7 "
	282.20		<u>Hauled 100' = 1800 " "</u>
		160.5	
	295.64		
		409.8	
	336.68		
		454.9	
	154.63		
		125.6	
		3807.9	

Section 8

Station	Grade	PB on L	L	C	R
407+40	4911.20	220	$\frac{00}{220}$	$\frac{-12}{09}$	$\frac{00}{20}$
					70

+50		218	$\frac{00}{218}$	$\frac{+09}{100}$	$\frac{00}{20}$
					70

+90		176	$\frac{+05}{203}$	$\frac{+47}{96}$	$\frac{00}{70}$
				$\frac{-09}{60}$	$\frac{-09}{40}$
					$\frac{00}{20}$
					60

408		166	$\frac{+52}{192}$	$\frac{+62}{120}$	$\frac{00}{86}$
				$\frac{-10}{60}$	$\frac{00}{30}$
					00
					$\frac{00}{50}$

+20		150	$\frac{+84}{192}$	$\frac{+88}{140}$	$\frac{00}{100}$
					00

+35		130	$\frac{+94}{177}$	$\frac{+96}{150}$	$\frac{00}{110}$
					00

408+65			$\frac{00}{110}$	00	$\frac{00}{00}$
--------	--	--	------------------	----	-----------------

Areas		Cub Yds.	
Exc	Emb	Exc	Emb

00

15.00

3837.9

11

33

891

270

46.0

43

53.25

3.15

18.1

11

4482

280

33.1

07

3847.3

44.68

0.0

254.1

3593.2

19.0

2276

407+406+408+65 Exc. 125.7 cu.

Class 3% L.R. = 37.7 cu.

70% S.R. = 88.0 "

84

125.7

00

South Leg "Y"

Station 401+66

L C R

Station Grade

401+66 Main Line =

0 of Y 4911.73

00 00 00

+35

00 +132
00 6.5 11.3

+60

00 +91
00 2.5 10.3

+85

00 +4.9
1.5 +5.5 9.2

1 04911.60

00 +30 +31
6.5 5.0 +31 8.8

+15

00 +11
8.0 +0.8 8.2

14' RB 1 1/2' 1

+20

-0.5 00
7.8 00 8.0

+50

4.06

-4.3 -3.5
13.5 -4.1 12.3

2

-10.7 -10.6
23.1 -10.8 22.9

+50

-16.8 -16.1
32.2 -17.0 31.1

2+75 4904.49

-20.5 -18.4
37.8 -20.1 34.6

Areas		Cub. Yds	
Exc.	Emb.	Exc.	Emb.
00	00	4.3	
9.90		Total Excav on Y 99.5 Cu. Y.	
		16.2	Class 30% Lo R = 29.8 Cu.
			70% S.R. = 69.7 "
25.02			
		34.3	Total Embank't = 10781.2
			Made from Cuts 119.4
49.03			10661.8
			less 5% 533.1
		25.7	Borrow 10128.7
			Class 1/3 Earth 3376.2 Cu.
43.54			2/3 Lo. R. 6752.5 "
		15.2	1/2 hauled 250 feet
10.88	00		= 17725 yds Haul
		07	01
00	17.5	96.4	
		45.5	
	80.19		
		373.3	
	322.95		
		903.9	
	653.20		
		702.3	
	863.77		
		1971.2	
		3996.3	

Station Grade

L

C

R

3+25 4902.46

-250

445

-25.1

-238

42.7

+50

-243

435

-276

-265

468

+75

-219

393

-241

-275

48.3

4

-210

385

-231

-263

465

+50

-154

301

-185

-216

394

Box @ vert 1 x v x 74

5

-73 -101

180

110

-115

-152

298

+30

-33

120

-66

-98

217

+50

-07

81

-11

-50

145

+80 4892.10

+85

00

20

-06

00 +0.7 00

40 50 8.0

6

00

50

55

+16

8.4

+10

00

60

60

+24

8.6

6+35

00

00

00

Areas		Cub Yds.	
Exc.	Emb.	Exc.	Emb.

1265.16

1423.94

1228.48

1147.30

772.38

364.10

157.06

00 3238

140 180

200 .00

240

00

Cub Yds.

Exc. Emb.

3996.3

Alignment12449 401+66² Main Line = 0

0 P.R.C. 5° R

12280 5° R. Aug. 3° 0'

0+60 P.T.

10999 0+71.6 P.C.

15° R - A. 87° 10'

17777 6+57.2 P.T.

6+57.2 is 775.7 ft.

South of 408+20² P.T.

10523 Main Line.

289.5

70.1

0.6 222

0.9 0.3

0.8 10781.2

0.8

3.1

✓

Section 8 — Ditches

370 to 372+83 — Side ditch on Left 20.9 Cu. LoR

379 to 389 Surface Ditch $\left\{ \begin{array}{l} 1 \times 3 \times 200 \\ 1.2 \times 3.5 \times 520 \\ 1.5 \times 4.5 \times 60. \\ 1 \times 3 \times 120 \end{array} \right\}$ 132.1 Cu. Ea.

390 to 393 " " 1 x 3 x 250 27.8 Ea.

394 to 403 " " 0.8 x 3 x 400 35.5 "

393 Ditch from lower end Box 1 x 2 x 8 0.5 "

397+50 " " " " 1 x 4 x 20 1.5 "

406 " " " " 1 x 4 x 125 18.5 "

215.9 Ea.

390 False Berm 4 x 6 x 30 = 26.6 Cu. Earth Berms

3+15 Y " " 2 x 6 x 80 = 35.5 " " "

62.1 Cu. Earth

393 Rip Rap End of Box Culvert 0.5 Cu. Yd.

397+50 " " " " " 1.5 "

2.0 "

✓

Clearing

Cy. Lor	370 to 375 — 50' wide	25000 ⁺
	380 to 86 — 60 "	36000
Cy. Ea.	388 to 40 — 60 "	72000
Borrow Pits for	350x430	148750
Ea.	6.50 Acres —	281750

9 Ea.

with Borrow

2175



Section 8

Page.	Stones Clearing	Excavation - Cub. Yds.		
		Total in Cut	Earth	Loose Rock Solid Rock
61		106.9 ✓	53.4 ✓	53.5 ✓
62				
63		689.0 ✓		50.0 ✓ 639.0 ✓
64		112.1 ✓		112.1 ✓
65		3714.3 ✓		595.6 ✓ 3118.7 ✓
66				
67		790.8 ✓		197.7 ✓ 593.1 ✓
68				
69		1112.0 ✓		333.6 ✓ 778.4 ✓
70		4367.1 ✓		1310.1 ✓ 3057.0 ✓
71				
72		125.7 ✓		37.7 ✓ 88.0 ✓
73		99.5 ✓		29.8 ✓ 69.7 ✓
75	650	236.8 ✓	215.9 ✓	20.9 ✓
650		11354.2 ✓	2693 ✓	2628.9 ✓ 8456.0 ✓

Summary

Borrow	Cu. Yds. Loose Earth Rock	Cu. Yds. Hauled 100'	Cu. Yds. Slope Wall and RipRap
--------	------------------------------------	----------------------------	---

796.7 ✓

640. ✓

1140.5 ✓

670.1 ✓

670.2 ✓

940. ✓

2074

207.4

2070. ✓

12190. ✓

793.1 ✓

1937 ✓

1800. ✓

33762 ✓ 67525 ✓ 17725 ✓

621 ✓

20 ✓

51089

8620.5

46770

2.0

BRADSHAW MOUNTAIN R. R. ~

Summary of

Number of SECTION	Acres Clearing	Excavation-Cubic Yards.			Lineal
		Total in Section	Earth	Loose Rock	Solid Rock Feet TUNNEL
1	10 ⁰⁰	25224.2	527.7	4821.2	19875.3
2	9.72	38009.8		1426.8	36583.0 220.5
3	8.95	29137.8		5169.4	23968.4
4	9.47	24639.4		1305.4	23334.0
5	8.93	20500.3		3363.0	17137.3
6	9.04	13313.5	72.1	1218.6	12022.8
7	5.60	6669.5	1725.0	2626.3	2318.2
8	6.50	11354.2	269.3	2628.9	8456.0
	68 ²¹	168848.7	2594.1	22559.6	143695.0 220.5

Pic 25⁰⁰

0.12

0.32

0.74

35⁰⁰

BIG BUG BRANCH

77

Totals.

Borrow-Cubic Yards	Cub.Yds	Cu.Yds
Earth	Loose Rock	Solid Rock
	Hauled 100'	Slope Wall and RipRap.

1604.4	697.2	5090.0	446.7
--------	-------	--------	-------

1630.4	1157.1	14306.0	114.7
--------	--------	---------	-------

183.6	7940.0
-------	--------

29.5	6142.0
------	--------

8376.0

38.5	1188.5	383.3	3572.0	13.2
------	--------	-------	--------	------

6555.8	7574.3	2441.0	1.5
--------	--------	--------	-----

5108.9	8620.5	4677.0	2.0
--------	--------	--------	-----

11703.2	20647.6	24212	52544.0	578.1
---------	---------	-------	---------	-------

0.17	0.32	0.74	0.12	0.80
------	------	------	------	------

Reference Points

Station

L

C

R

231+09 PS9x10R

227+60.3 PT.

218+72 PS9x10L

217+56.6 Ford =

217+82.7 Back P.T.

216+286 P.I.

214+68.1 PC 8°L

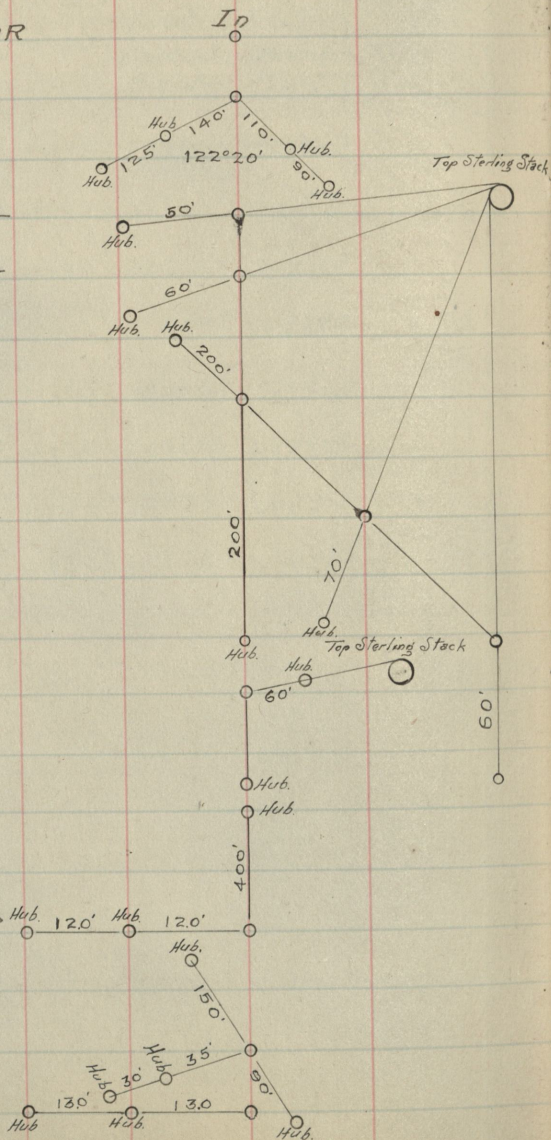
213+00.8 PT.

210+07 PT.

204+52 PS9x10R

204+03.3 P.T.

197+12 PS8x13L



78

Hand-drawn traverse diagram on graph paper. The path is defined by the following bearings and distances:

- Hub (left) to Hub: 200'
- Hub to Hub (under C): 140'
- Hub (under C) to Hub (under R): 250'
- Hub (under R) to Rock: 125'
- Rock to Hub (under R): 50'
- Hub (under R) to Hub (right): 275'
- Hub (right) to Hub (under R): 400'
- Hub (under R) to Hub (under R): 43° 27'
- Hub (under R) to Hub (under R): 63° 30'
- Hub (under R) to Hub (under R): 125'
- Hub (under R) to Hub (bottom): 800'

The diagram is labeled with 'L' and 'R' at the top, and 'Hub' and 'Rock' at various points along the path.

terling

60'

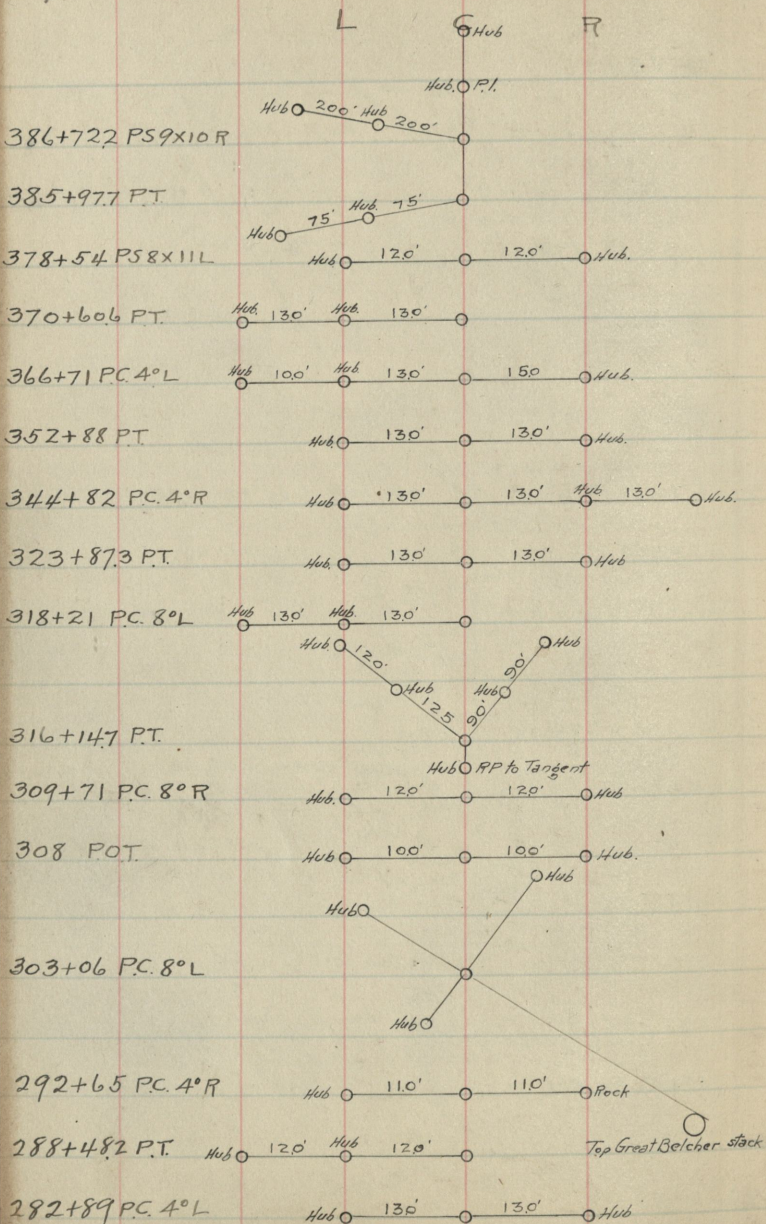
Hub 12.0' Hub 12.0' Hub. 13.0' Hub.

A diagram of a sewer line layout. A horizontal line represents the main sewer line, with three circular manholes. The first manhole on the left is labeled "Hub.". The second manhole in the middle is also labeled "Hub.". The third manhole on the right is labeled "Hub.". The distance between the first and second manholes is labeled "130'". The distance between the second and third manholes is labeled "130'". A branch line extends from the first manhole to a fourth manhole below it, labeled "Hub.". The distance between these two manholes is labeled "3.5'".

$$BM = 5292.85$$
[illegible]

Hub $\circ$ 120' $\circ$ 130' $\circ$ Hub

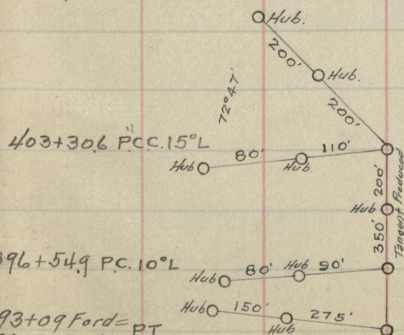
Reference Points



Bench Marks

79

Station			Elevation
201+35	50' R	on Hub.	5445.99
208+15	15' L	" "	5421.11
216	30' L	" "	5391.51
225+50	35' L	" "	5379.98
244+81	See Reference point notes		
249+90	50' L	on Hub	5281.20
261+25	40' L	" "	5274.82
273	80' L	" Rock	5282.73
284+10	30' L	" Hub	5230.69
295+25	60' L	" "	5191.25
315+25	60' L	" "	5115.65
325	40' R	" Rock	5067.04
376+50	60' L	" Hub	4927.88
392+75	30' L	" "	4917.04
407	50' R	" "	4912.05



38

38

37

37

36

35

34

32

318

316

309

308

303+

292

288+

282+

